Panasonic

The illustration shows the model for Australia and N.Z.

Operating Instructions

DVD Home Theater Sound System

Model No. **SC-HT880W**

Region number
The player plays DVD-Video marked with labels containing the region number or "**ALL**".

Region	Number
The United Kingdom	2
Australia and N.Z.	4

Example: Australia and N.Z.

Before connecting, operating or adjusting this product, please read the instructions completely.
Please keep this manual for future reference.

GN EB

Advanced progressive scan page 7
Provides a smoother and sharper image.

Digital Transmitter and Receiver page 9
Set your surround sound free.

Compatible with a variety of media formats page 11
DVD-RAM, DVD-Audio, DVD-Video and more.

High performance sound effects page 24
Sound field control (SFC), Bass sound enhancement and more.

Note
"EB" on the packaging indicates the United Kingdom.

RQT7991-2B

Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully.

- **These operating instructions are applicable to models for a variety of regions.**
- **Unless otherwise indicated, illustrations in these operating instructions are of the model for Australia and N.Z.**
- **Operations in these instructions are described mainly with the remote control, but you can perform the operations on the main unit if the controls are the same.**

System	SC-HT880W
Main unit	SA-HT880W
Front speakers	SB-FS930
Center speaker	SB-PC930
Surround speakers	SB-FS880
Active subwoofer	SB-WA880
Digital transmitter	SH-FX50T
Digital receiver	SE-FX50

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

CAUTION!

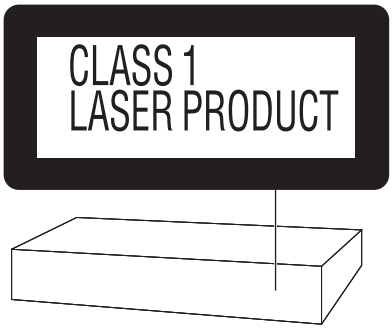
- **DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.**
- **DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.**
- **DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.**
- **DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.**

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

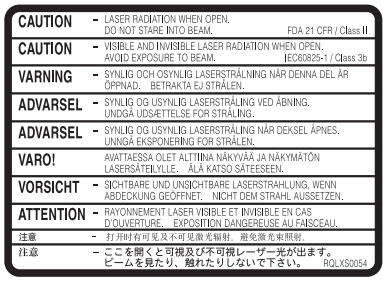
The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

For the digital receiver only
Although the AC power switch is in the "OFF" position, the unit is not completely disconnected from the mains. Remove the plug from the main electrical outlet if you will not be using the unit for an extended period of time. Place the unit so the plug can be easily removed.



(Back of product)


CAUTION – LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR / Class II
CAUTION – VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. IEC60825-1 / Class 3b
VARNING – SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL – SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNNGÅ UDSÆTTELSE FOR STRÅLING.
ADVARSEL – SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VARO! AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VORSICHT – SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
ATTENTION – RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
注意 – 打开时有可见及不可见激光辐射。避免激光束照射。
注意 – ここを開くと可視及び不可視レーザー光が出ます。ビームを見たり、触れたりしないで下さい。
RQLXS0054

(Inside of product)

Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.

Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other places where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.

Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.

Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

Caution for AC Mains Lead

(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.
This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ♆ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below.
If in any doubt please consult a qualified electrician.

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

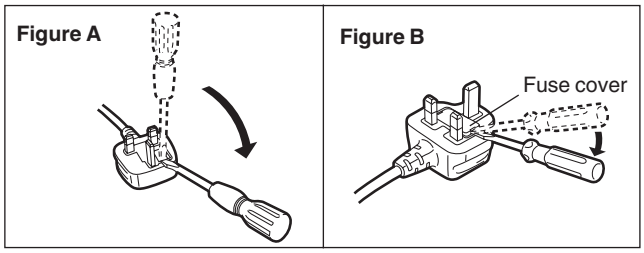
WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

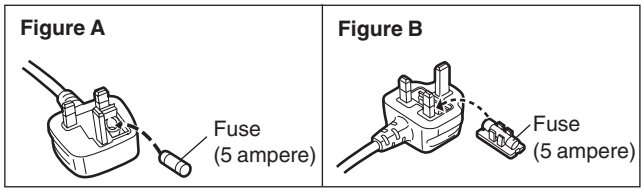
Before use
Remove the connector cover.

How to replace the fuse
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.



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Simple setup

STEP 1 Front and surround speaker assembly

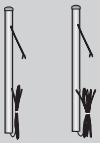
The supplied stands are specially designed for attachment to Panasonic SB-FS930 front speakers or SB-FS880 surround speakers. Use only as indicated in this setup.

Preparation
- To prevent damage or scratches, lay down a soft cloth and perform assembly on it.
- For assembly, use a Phillips-head screwdriver.
- Make sure you have all the indicated components before starting assembly, setup, and connection.
- There is no difference between the right and left speakers and pipes.

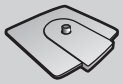
Note
- To prevent the speaker cables from being pulled out of the pipes, leave the plastic wrap on the pipes while assembling the speaker stands.
- The front and surround speaker pairs as well as the pipe pairs are different.
  –Check the label on the rear of the speaker before attaching the pipe (➜ page 5).
  –The pipe with the shorter cable is for the front speaker.

2 Front and 2 Surround speakers

Pipes
- 2× pipes with short cable: For front speakers
- 2× pipes with long cable: For surround speakers



4 Bases

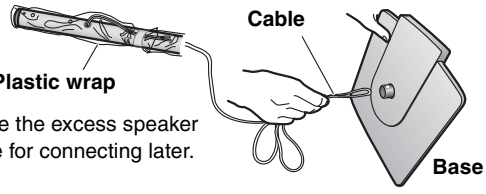


8 Long screws

8 Short screws

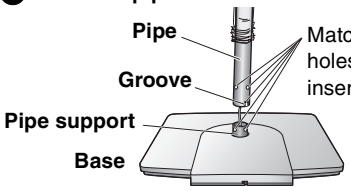
1 Assemble the speaker stands.

❶ Thread the speaker cable through the base.
For quicker threading, loosely fold the cable in half (do not crease), pass the folded portion through the hole, and then pull the rest of the cable through the base.



Leave the excess speaker cable for connecting later.

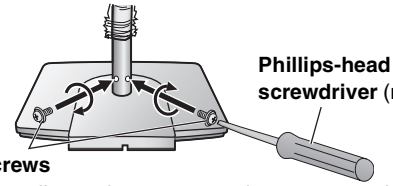
❷ Insert the pipe.



Match the groove and these holes with the base when you insert the pipe.

Insert the pipe while gently pulling on the speaker cable.

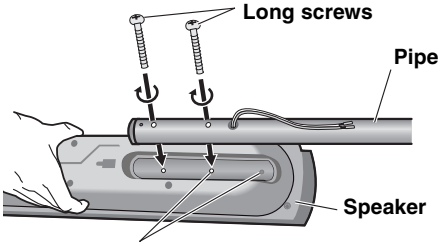
❸ Secure the pipe to the base.
Ensure the screws are securely fastened.



Before proceeding to the next step, please remove the plastic wrap from the pipe.

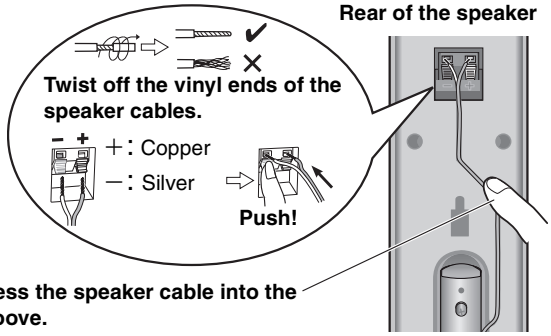
2 Attach the stands to the speakers.

Ensure the stand is fastened on straight by gradually tightening the top and bottom screws alternately until fully tightened.



You can also attach to the lower rear of the speaker.
The height of the speaker can be changed when attaching the stand to the upper rear or lower rear of the speaker.

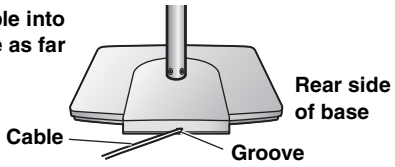
3 Connect the speaker cables.


Rear of the speaker
Twist off the vinyl ends of the speaker cables.
+: Copper
−: Silver
Push!
Press the speaker cable into the groove.

If there is any excess speaker cable, thread the speaker cable into the opening near the top of the pipe while pulling the speaker cable from the bottom of the base.

4 Secure the speaker cables to the bases.

Press the speaker cable into the base cover groove as far as possible.

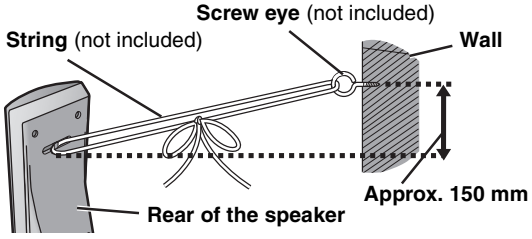


■ Preventing the speakers from falling over

Preparation
Attach screw eyes (not included) to secure the speakers to the wall (➜ diagram below).

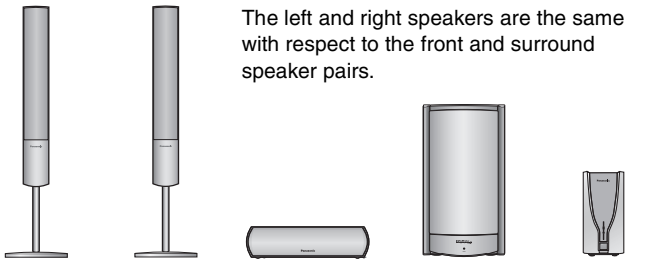
- You will need to obtain the appropriate screw eyes to match the walls or pillars to which they are going to be fastened.
- Consult a qualified housing contractor concerning the appropriate procedure when attaching to a concrete wall or a surface that may not have strong enough support. Improper attachment may result in damage to the wall or speakers.

❶ Thread the string (not included) through the slot on the rear of the speaker to prevent it from falling over.
❷ Loop the string through the screw eye and tie tightly.



STEP 2 Positioning

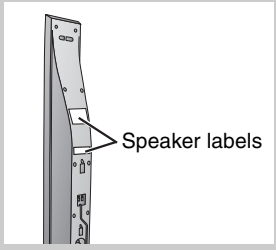
How you set up your speakers can affect the bass and the sound field. Note the following points:
- Place speakers on flat secure bases.
- Placing speakers too close to floors, walls, and corners can result in excessive bass. Cover walls and windows with thick curtains.



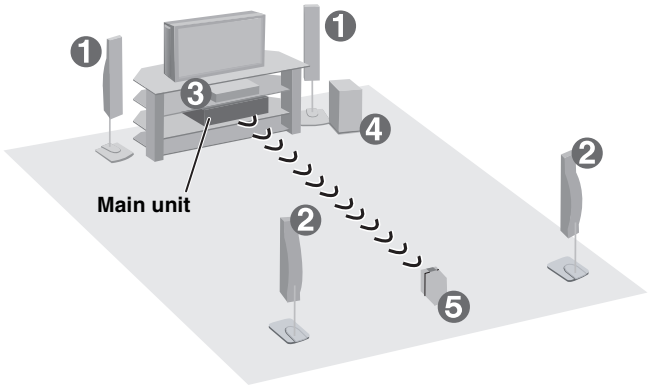
The left and right speakers are the same with respect to the front and surround speaker pairs.

1 FRONT (L, R)
2 SURROUND (L, R)
3 CENTER
4 ACTIVE SUBWOOFER
5 DIGITAL RECEIVER

Do not use a front speaker as a surround speaker or vice versa. Verify the type of speaker with the label on the rear of the front speaker.

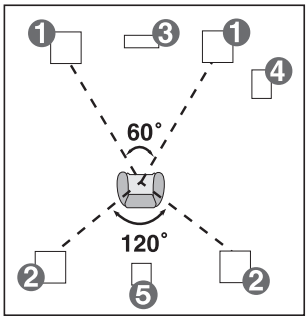


Setup example



- Place the digital receiver within approximately 10 m from the main unit.
- Do not use this wireless system near a microwave oven.
- Do not place the main unit or receiver in a metal cabinet or bookshelf.

Place the front, center, and surround speakers at approximately the same distance from the seating position. The angles in the diagram are approximate.



Other speaker setup options (➜ page 29)

●Use only supplied speakers
Using other speakers can damage the unit, and sound quality will be negatively affected.
- Set the speakers up on an even surface to prevent them from falling. Take proper precautions to prevent the speakers from falling if you cannot set them up on an even surface.

Main unit

Note

Keep your speakers at least 10 mm away from the system for proper ventilation.

Center speaker

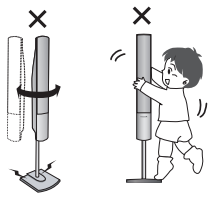
- Vibration caused by the center speaker can disrupt the picture if it is placed directly on the television. Put the center speaker on a rack or shelf.
- To prevent the speakers from falling, do not place directly on top of the television.

Active subwoofer

Place to the right or left of the television, on the floor or a sturdy shelf so that it won't cause vibration. Leave 10 cm at the rear for ventilation.

Caution

Do not stand on the base and shake the speaker.
Be cautious when children are near.



Notes on speaker use

- You can damage your speakers and shorten their useful life if you play sound at high levels over extended periods.
- Reduce the volume in the following cases to avoid damage:
  – When playing distorted sound.
  – When the speakers are reverberating due to a record player, noise from FM broadcasts, continuous signals from an oscillator, test disc, or electronic instrument.
  – When adjusting the sound quality.
  – When turning the unit on or off.

If irregular coloring occurs on your television

The supplied speakers are designed to be used close to a television, but the picture may be affected with some televisions and setup combinations.
If this occurs, turn the television off for about 30 minutes.
The television's demagnetizing function should correct the problem. If it persists, move the speakers farther away from the television.

Caution

- **The active subwoofer, supplied speakers and digital receiver are to be used only as indicated in this setup. Failure to do so may lead to damage to the amplifier, the speakers and/or digital receiver, and may result in the risk of fire. Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.**
- **Do not attempt to attach these speakers to walls using methods other than those described in this manual.**

STEP 3 Connecting speakers with the subwoofer and the digital receiver

- Attach the speaker-cable stickers to make connection easier.
- The terminals of the subwoofer and the digital receiver have high output power. Carefully connect the speaker wires.

Speaker cable
(For center speaker)

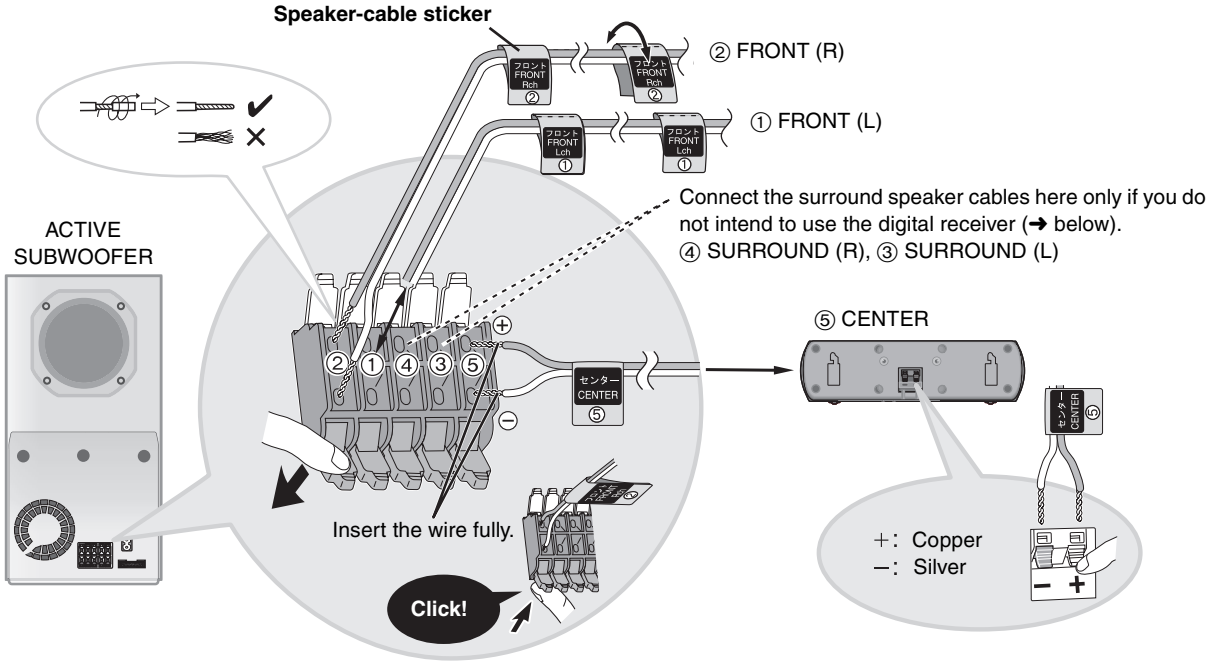
Sheet of speaker-cable stickers

AC mains lead

Australia and N.Z.

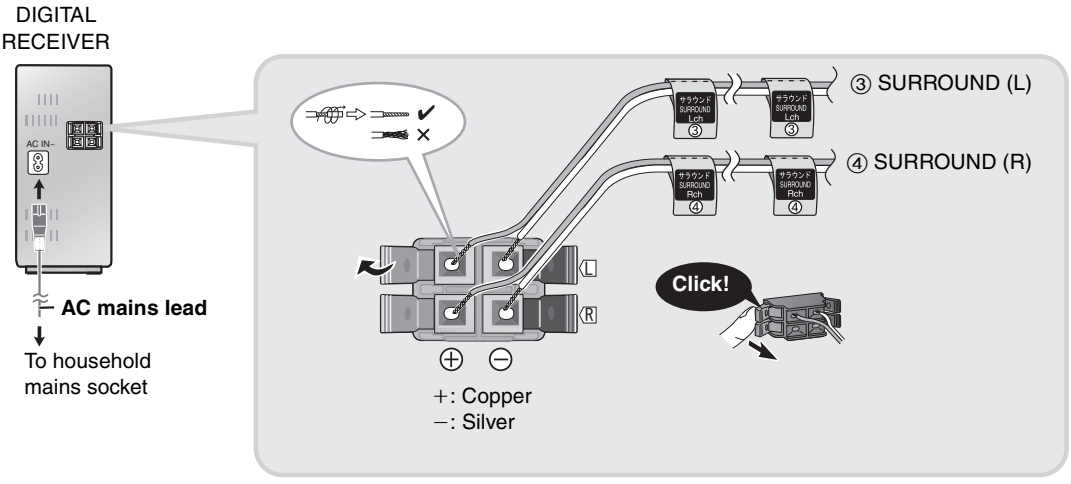
The United Kingdom

Front and center speaker connection


Speaker-cable sticker
② FRONT (R)
① FRONT (L)
Connect the surround speaker cables here only if you do not intend to use the digital receiver (➜ below).
④ SURROUND (R), ③ SURROUND (L)
ACTIVE SUBWOOFER
⑤ CENTER
Insert the wire fully.
Click!
+: Copper
−: Silver

Surround speaker connection

- **Connect the AC mains lead after speaker cable connections are complete.**



Note

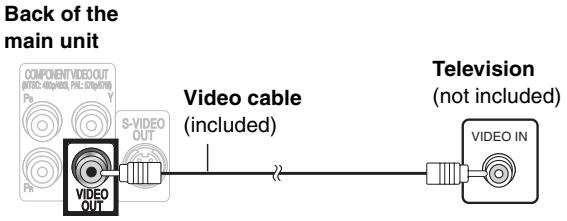
- Never short-circuit positive (+) and negative (−) speaker wires.
- Be sure to connect only positive (copper) wires to positive (+) terminals and negative (silver) wires to negative (−) terminals. Incorrect connection can damage the speakers.
- Do not use more than one pair of surround speakers when using this wireless system.

STEP 4 Video connections

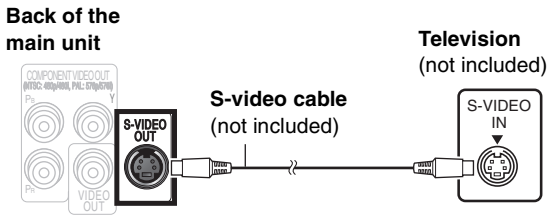
- **Do not connect through the video cassette recorder.** Due to copy guard protection, the picture may not be displayed properly.
- Turn the television off before connecting, and refer to the television's operating instructions.

Video cable

■ Television with a VIDEO IN terminal



■ Television with an S-VIDEO IN terminal

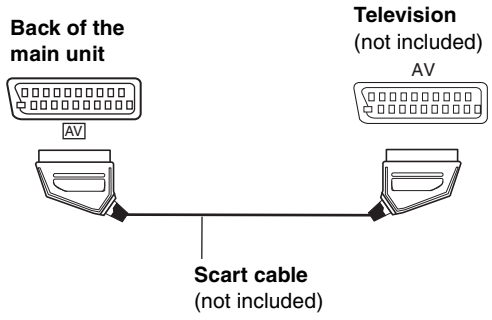


S-VIDEO OUT terminal

The S-VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal by separating the chrominance (C) and luminance (Y) signals. (Actual results depend on the television.)

The United Kingdom

■ Television with SCART terminal

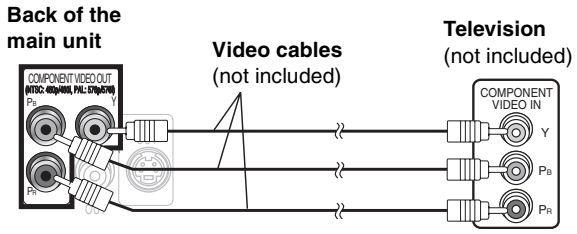


SCART (AV) terminal

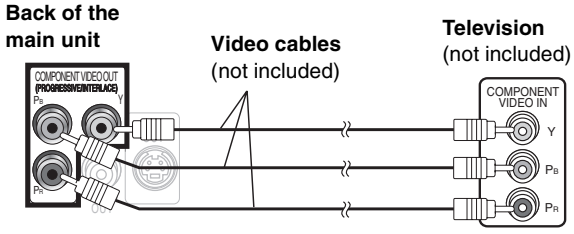
To improve picture quality, you can change the video signal output from the SCART (AV) terminal from "Video" to either "S-Video" or "RGB" to suit the type of television you are using. Select "S-Video/YPbPr" or "RGB/No Output" from QUICK SETUP (➜ page 9).

■ Television with COMPONENT VIDEO IN terminals

Australia and N.Z.



The United Kingdom



COMPONENT VIDEO OUT terminals

These terminals can be used for either interlace or progressive output and provide a purer picture than the S-VIDEO OUT terminal. Connection using these terminals outputs the color difference signals (P_B/P_R) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colors.

- The description of the component video input terminals depends on the television or monitor (e.g. $Y/P_B/P_R$, Y/B-Y/R-Y, $Y/C_B/C_R$). Connect to terminals of the same color.

The United Kingdom

- When making this connection, select "Video/YPbPr" or "S-Video/YPbPr" from QUICK SETUP (➜ page 9). If "RGB/No Output" is selected, the RGB signal is output from the SCART (AV) terminal, but no signal is output from the component video output terminals.

To enjoy progressive video

- Connect to the component video input terminals on a 576p (or 625p) or 480p (or 525p) compatible television. (Video will not be displayed correctly if connected to an incompatible television.)

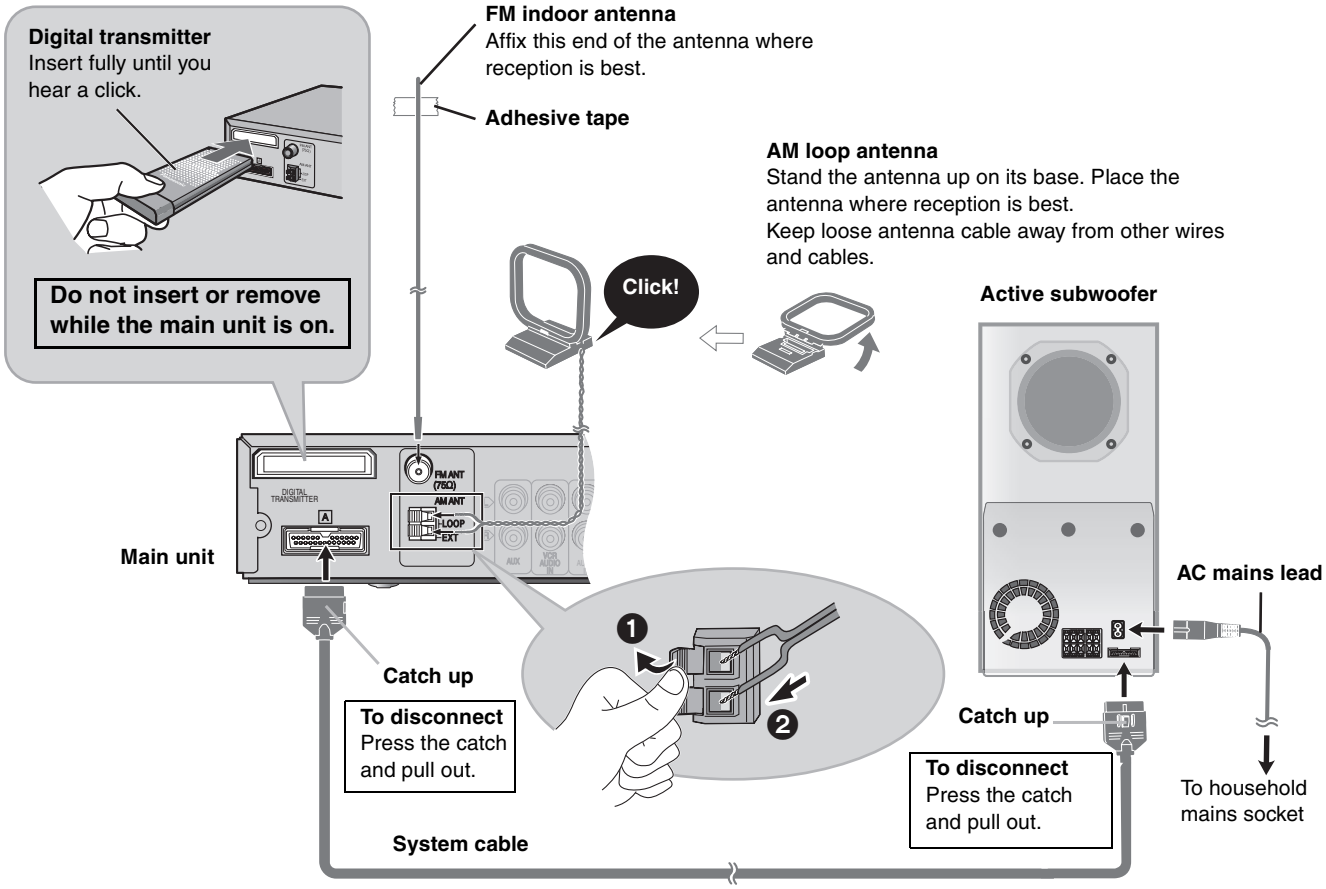
The United Kingdom

- Panasonic televisions with 625 (576)/50i·50p, 525 (480)/60i·60p input terminals are progressive compatible. Consult the manufacturer if you have another brand of television.

STEP 5 The digital transmitter, radio and system connections

System cable | Digital transmitter | AM loop antenna | FM indoor antenna | AC mains lead (Australia and N.Z. / The United Kingdom)

- **Connect the AC mains lead after all other connections are complete.**
- **Optional antenna connections (➜ page 23).**


Digital transmitter
Insert fully until you hear a click.
Do not insert or remove while the main unit is on.
FM indoor antenna
Affix this end of the antenna where reception is best.
Adhesive tape
AM loop antenna
Stand the antenna up on its base. Place the antenna where reception is best.
Keep loose antenna cable away from other wires and cables.
Click!
Active subwoofer
Main unit
AC mains lead
Catch up
To disconnect
Press the catch and pull out.
Catch up
To disconnect
Press the catch and pull out.
To household mains socket
System cable

Conserving power

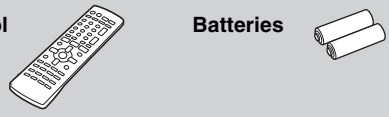
The main unit consumes a small amount of power, even when it is turned off (approx. 0.7 W). To save power when the unit is not to be used for a long time, unplug it from the household mains socket.
You will need to reset some memory items after plugging in the unit.

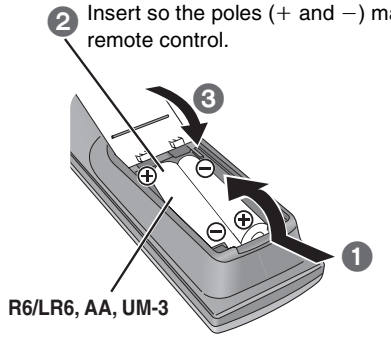
The United Kingdom
BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 3 BEFORE CONNECTION.

Note
The included AC mains lead is for use with this unit only. Do not use it with other equipment.

STEP 6 The remote control

Remote control | Batteries





- Do not use rechargeable type batteries.

Do not:
- mix old and new batteries.
- use different types at the same time.
- heat or expose to flame.
- take apart or short circuit.
- attempt to recharge alkaline or manganese batteries.
- use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

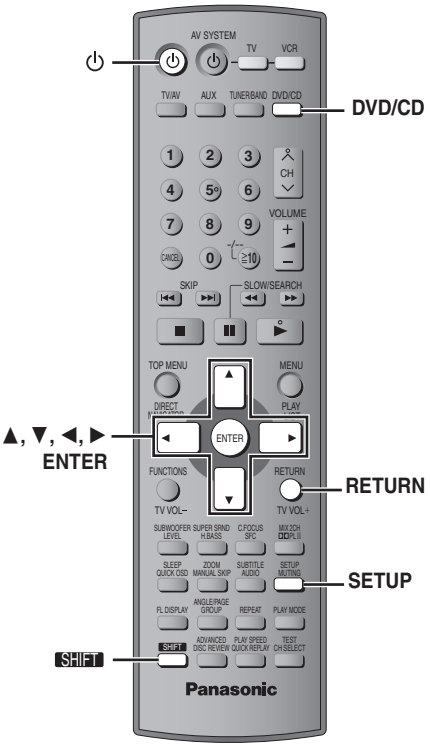
Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

■ Use

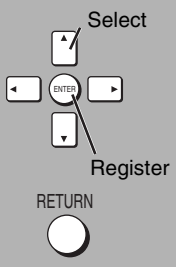
Aim at the remote control signal sensor (➜ page 10), avoiding obstacles, at a maximum range of 7 m directly in front of the unit.

STEP 7 QUICK SETUP

The QUICK SETUP screen assists you to make necessary settings.
Turn on the television and select the appropriate video input on the television.



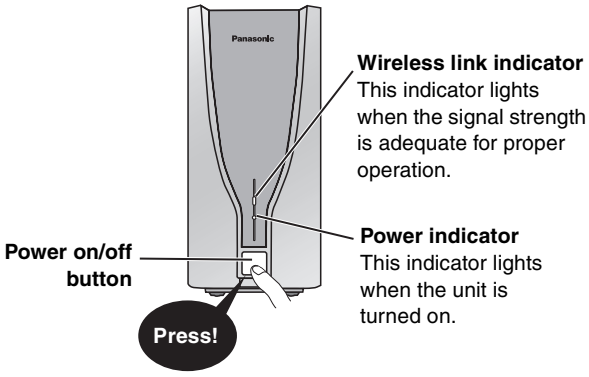
To change these settings later
Select “QUICK SETUP” in the “Others” tab (➜ page 21).

1		**Turn on the main unit.**
2		**Select “DVD/CD”.**
3		**Show the QUICK SETUP screen.**
4		**Follow the messages and make the settings.**
5		**Press to finish QUICK SETUP.**
6		**Press to exit.**

STEP 8 Turning on the digital receiver

1 Turn on the main unit. (➜ above)

2 Turn on the digital receiver.


Panasonic
Wireless link indicator
This indicator lights when the signal strength is adequate for proper operation.
Power indicator
This indicator lights when the unit is turned on.
Power on/off button
Press!

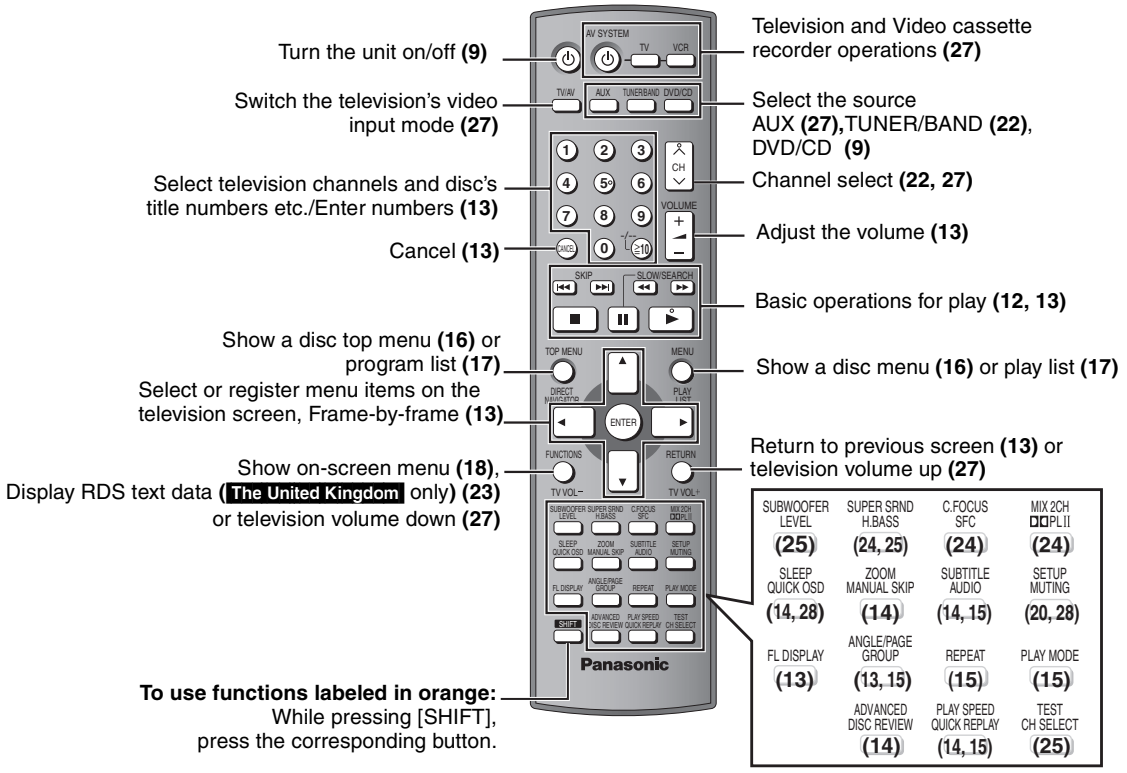
“ W ” lights up in the display on the main unit.

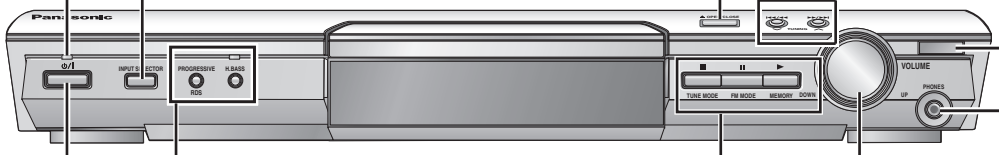
(“ W ” is flashing ➜ page 35, Unit displays)

Note
To save power when your home theater system is not being used, first turn off the digital receiver followed by the main unit.

Control reference guide

See reference pages in brackets.


Turn the unit on/off (9)
Switch the television's video input mode (27)
Select television channels and disc's title numbers etc./Enter numbers (13)
Cancel (13)
Show a disc top menu (16) or program list (17)
Select or register menu items on the television screen, Frame-by-frame (13)
Show on-screen menu (18), Display RDS text data (The United Kingdom only) (23) or television volume down (27)
To use functions labeled in orange: While pressing [SHIFT], press the corresponding button.
Television and Video cassette recorder operations (27)
Select the source AUX (27), TUNER/BAND (22), DVD/CD (9)
Channel select (22, 27)
Adjust the volume (13)
Basic operations for play (12, 13)
Show a disc menu (16) or play list (17)
Return to previous screen (13) or television volume up (27)
SUBWOOFER LEVEL (25)
SUPER SRND H.BASS (24, 25)
C.FOCUS SFC (24)
MIX 2CH DOLBY PL II (24)
SLEEP QUICK OSD (14, 28)
ZOOM MANUAL SKIP (14)
SUBTITLE AUDIO (14, 15)
SETUP MUTING (20, 28)
FL DISPLAY (13)
ANGLE/PAGE GROUP (13, 15)
REPEAT (15)
PLAY MODE (15)
ADVANCED DISC REVIEW (14)
PLAY SPEED QUICK REPLAY (14, 15)
TEST CH SELECT (25)
Panasonic



Standby/on indicator
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.

INPUT SELECTOR (22)
DVD/CD→FM→AM→TV→VCR→AUX→Return to DVD/CD

▲OPEN/CLOSE
Open/Close the disc tray **(12)**

I◄◄/◄◄, ►►/►►I/∨ TUNING ∧
Skipping or slow-search play **(12)**/
Select the radio stations **(22)**

Remote control signal sensor

PHONES
Connect headphones **(28)**

VOLUME
Turn up/down the volume **(12)**

PROGRESSIVE
Enjoy progressive video **(12)**
RDS (The United Kingdom only)
Display RDS text data **(23)**
H.BASS
Turn the bass sound enhancement on/off **(25)**
H.BASS indicator

■/TUNE MODE
Stop playing **(12)**/
Select the tuning mode **(22)**
❚❚/FM MODE
Pause **(12)**/Adjust the FM reception condition **(22)**
►/MEMORY
Play discs **(12)**/Memorize the receiving radio stations **(22)**

Standby/on switch [⏻/I]
Press to switch the unit from on to standby mode or vice versa.
In standby mode, the unit is still consuming a small amount of power. **(12)**

The main unit illustration shows the model for the United Kingdom.

AC supply indicator [AC IN]
This indicator lights when the unit is connected to the AC mains supply.

Discs that can be played

Disc	Logo	Indication in these operating instructions	Remarks
DVD-RAM	DVD RAM RAM4.7	RAM	Recorded with devices using Version 1.1 of the Video Recording Format (a unified video recording standard), such as DVD video recorders, DVD video cameras, personal computers, etc.
		JPEG	Recorded using the DCF (Design rule for Camera File system) standard Version 1.0. ● To play JPEG files, select “Play as Data Disc” in Other Menu (➜ page 19).
DVD-Audio	DVD AUDIO	DVD-A	—
		DVD-V	Some DVD-Audio discs contain DVD-Video content. To play DVD-Video content, select “Play as DVD-Video” in Other Menu (➜ page 19).
DVD-Video	DVD VIDEO DVD VIDEO	DVD-V	—
DVD-R (DVD-Video)/ DVD-RW (DVD-Video)	DVD R R4.7 DVD RW		Discs recorded and finalized※ on DVD video recorders or DVD video cameras.
+R (Video)/ +RW (Video)	—		Discs recorded and finalized※ on DVD video recorders or DVD video cameras.
Video CD	COMPACT disc DIGITAL VIDEO	VCD	—
SVCD	COMPACT disc SUPER VIDEO		Conforming to IEC62107
CD	COMPACT disc DIGITAL AUDIO COMPACT disc DIGITAL AUDIO TEXT	CD	This unit is compatible with HDCD, but does not support the Peak Extend function (a function which expands the dynamic range of high level signals). HDCD-encoded CD’s sound better because they are encoded with 20 bits, as compared with 16 bits for all other CD’s.
CD-R CD-RW	—	WMA MP3 JPEG CD VCD	● This unit can play CD-R/RW (audio recording disc) recorded with the formats on the left. Close the sessions or finalize※ the disc after recording. ● **HighMAT discs** WMA, MP3 or JPEG files only. To play without using the HighMAT function, select “Play as Data Disc” in Other Menu (➜ page 19). ● WMA This unit does not support Multiple Bit Rate (MBR: a file that contains the same content encoded at several different bit rates).

※ A process that allows play on compatible equipment.

● It may not be possible to play the above discs in all cases due to the type of disc or condition of the recording.

■ Discs that cannot be played

DVD-ROM, CD-ROM, CDV, CD-G, SACD, DivX Video Discs and Photo CD, DVD-RAM that cannot be removed from their cartridge, 2.6-GB and 5.2-GB DVD-RAM and “Chaoji VCD” available on the market including CVD, DVCD and SVCD that do not conform to IEC62107.

■ Audio format of DVD’s

This unit automatically recognizes and decodes discs with these symbols.

DOLBY DIGITAL

DIGITAL dts SURROUND

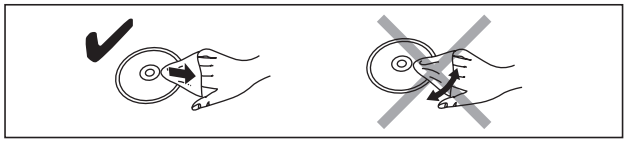
■ Video systems

– This unit can play PAL and NTSC, but your television must match the system used on the disc.
– PAL discs cannot be correctly viewed on an NTSC television.
– This unit can convert NTSC signals to PAL 60 for viewing on a PAL television (➜ page 21, “NTSC Disc Output” in “Video” tab).

Disc handling

■ To clean discs

Wipe with a damp cloth and then wipe dry.



■ Disc handling precautions

● Do not attach labels or stickers to discs (This may cause disc warping, rendering it unusable).
● Do not write on the label side with a ball-point pen or other writing instrument.
● Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
● Do not use scratch-proof protectors or covers.
● Do not use the following discs:
– Discs with exposed adhesive from removed stickers or labels (rented discs, etc.).
– Discs that are badly warped or cracked.
– Irregularly shaped discs, such as heart shapes.

Using the main unit

1 **Turn the main unit on.**

⏻/I

2 **Select "DVD/CD".**

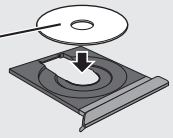
INPUT SELECTOR

3 **Open the disc tray.**

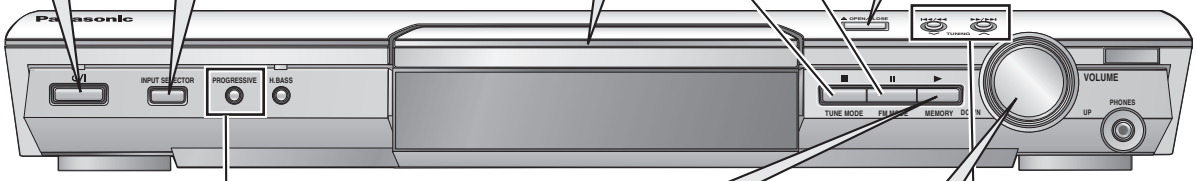
⏏ OPEN/CLOSE

4 **Load the disc.**

- Load double-sided discs so the label for the side you want to play is facing up.



- **RAM** Remove the disc from its cartridge before use.



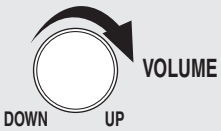
PROGRESSIVE
You can enjoy progressive video (➜ page 7).

5 **Start play.**

The tray is automatically closed.

►

6 **Adjust the volume.**



Press to skip.
Press and hold to
– search (during play)
– slow-motion (during pause) (Motion picture part)

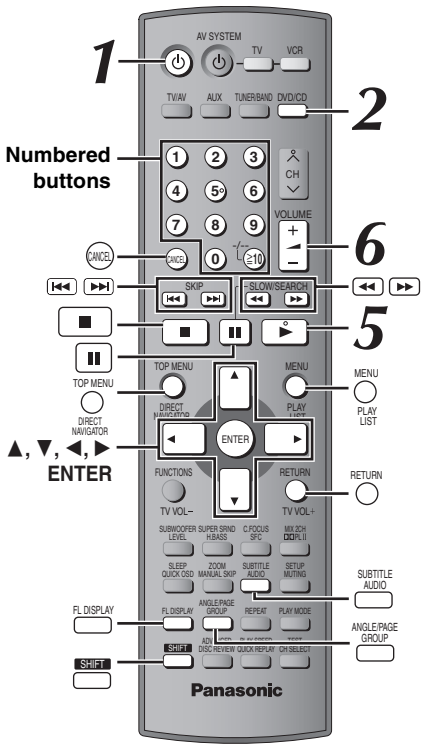
- Press [►] (play) to start normal play.

I◄◄/◄◄ ►►/►►I

Note

- Discs continue to rotate while menus are displayed. Press [■] when you finish to preserve the unit's motor and your television screen.
- Total title number may not be displayed properly on +R/+RW.

Using the remote control



Stop ■

The position is memorized while "RESUME" is on the display.
- Press [▶] (play) to resume.
- Press [■] again to clear the position.

Pause ❚❚

- Press [▶] (play) to restart play.

Skip SKIP ⏮ ⏭

- WMA MP3 JPEG

[▲, ▼] :Group skip during play
[◀, ▶] :Content skip during play

Search (during play)
Slow-motion (during pause)
SLOW/SEARCH ◀◀ ▶▶

- Up to 5 steps.
- Press [▶] (play) to start normal play.
- VCD Slow-motion: forward direction only.

Frame-by-frame (during pause)

DVD-A (Motion picture part)
RAM DVD-V VCD

- VCD Forward direction only.

On-screen item select

Select
ENTER
Register

Enter number

1 2 3
4 5 6
7 8 9
0 ≧10
ENTER
CANCEL

RAM DVD-A DVD-V VCD CD
e.g. To select 12:
[≧10] ➜ [1] ➜ [2]

VCD with playback control
Press [■] to cancel the PBC function, and then press the numbered buttons.

WMA MP3 JPEG
e.g. To select 123:
[1] ➜ [2] ➜ [3] ➜ [ENTER]

- Press [CANCEL] to cancel the number(s).

Disc menu

TOP MENU
DIRECT NAVIGATOR

DVD-A DVD-V
Shows a disc top menu

RAM
Shows the programs (➜ page 17)

MENU
PLAY LIST

DVD-V
Shows a disc menu

RAM
Shows a play list (➜ page 17)

RETURN

VCD with playback control
Shows a disc menu

Return to previous screen RETURN

Main unit display FL DISPLAY

RAM DVD-A DVD-V WMA MP3
Time display
↔ Information display

JPEG
When Slideshow (➜ page 18) is on:
SLIDE↔Information display
When Slideshow is off:
PLAY↔Information display

Subtitles/ Information screen

SHIFT + SUBTITLE AUDIO

RAM
Turns subtitle on/off (➜ page 15)

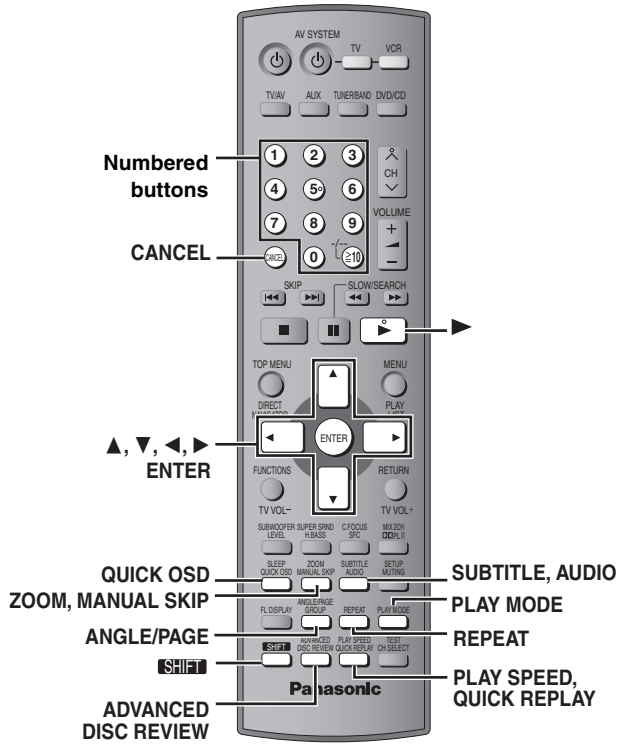
DVD-V VCD (SVCD only)
Selects the subtitle languages (➜ page 15)

JPEG
Date → Details of the picture
↑— No information ←—┘

Starting play from a selected group

ANGLE/PAGE GROUP
↓
Select
ENTER
Register

DVD-A WMA MP3 JPEG
A folder on WMA/MP3 and JPEG discs is treated as a "Group".

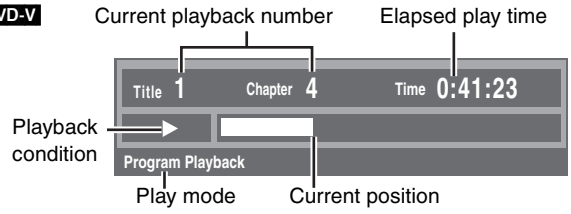


SLEEP QUICK OSD — Displaying current playback condition (QUICK OSD)

The current playback condition is displayed.

Press [QUICK OSD].

e.g. DVD-V



●To exit the screen

Press [QUICK OSD].

● CD MP3 WMA The QUICK OSD screen will appear automatically.

ADVANCED DISC REVIEW — Reviewing titles to play (ADVANCED DISC REVIEW)

RAM DVD-V (Except +R/+RW)

Allows you to browse the disc contents and start playing from the selected position. You can select either "Intro Mode" or "Interval Mode" in "Advanced Disc Review" in the "Disc" tab (➜ page 20).

1 Press [ADVANCED DISC REVIEW].

The QUICK OSD screen is displayed.

e.g. RAM

2 Press [►] (play) when you find a title/ program to play.

This may not work depending on the disc and the play position.

PLAY SPEED QUICK REPLAY — Quick replay

(Only when the elapsed play time can be displayed.)

(Except +R/+RW)

Press [QUICK REPLAY] to skip back a few seconds.

ZOOM MANUAL SKIP — Skipping 30 seconds forward

(Only when the elapsed play time can be displayed.)

RAM DVD-V (Except +R/+RW)

Play restarts from approximately 30 seconds later. Convenient when you want to skip commercials etc.

During play

Press [MANUAL SKIP].

RAM It is not possible to skip through the current program if the start of the next program is within about 30 seconds of the point you are skipping from.

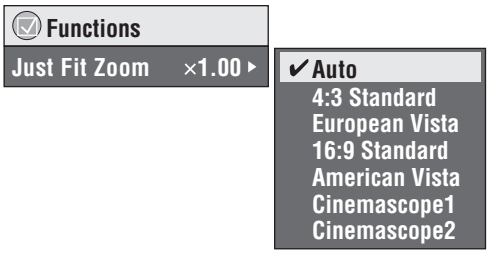
SHIFT + ZOOM MANUAL SKIP — Changing the zoom ratio

DVD-A (Motion picture part) RAM DVD-V VCD

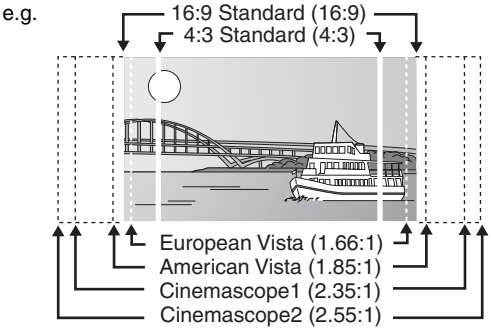
This feature expands the letterbox picture to fit the screen.

During play

Press [SHIFT]+[ZOOM] several times to select the preset aspect ratio (Just Fit Zoom) or "Auto".



e.g.



Fine adjustments (Manual Zoom)

After selecting the preset aspect ratio or "Auto", press [◄, ►].

–from "×1.00" to "×1.60" (in 0.01 units)

–from "×1.60" to "×2.00" (in 0.02 units)

● Press and hold [◄, ►] to alter faster.

SUBTITLE AUDIO — Changing soundtracks

DVD-A DVD-V (with multiple soundtracks) RAM VCD

Press [AUDIO] several times to select the soundtrack.

e.g. DVD-V

RAM VCD

You can use this button to select "L", "R" or "LR".

DVD-V (Karaoke discs)

Press [◄, ►] to select "On" or "Off" for vocals.

Read the disc's instructions for details.

Signal type/data

LPCM/PPCM/DD Digital/DTS/MPEG: Signal type

kHz (Sampling frequency)/bit/ch (Number of channels)

Example: 3/2 .1ch

- .1: Low frequency effect (not displayed if there is no signal)
- 0: No surround
  1: Mono surround
  2: Stereo surround (left/right)
- 1: Center
  2: Front left+Front right
  3: Front left+Front right+Center

Changing subtitles

DVD-V (with multiple subtitles) VCD (SVCD only)

Press [SHIFT]+[SUBTITLE] several times to select the subtitle language.

- On +R/+RW, a subtitle number may be shown for subtitles that are not displayed.

To display/clear the subtitles

Press [◄, ►] to select "On" or "Off".

RAM (On/Off only with discs that contain subtitle on/off information)

Press [SHIFT]+[SUBTITLE] to select "On" or "Off".

- Subtitle on/off information cannot be recorded using Panasonic DVD Recorders.

Angle selection and Still picture rotation/advance

Press [SHIFT]+[ANGLE/PAGE] several times to select the angle or rotate/advance the still picture.

DVD-V (with multiple angles)– Angle selection

JPEG –Still picture rotation

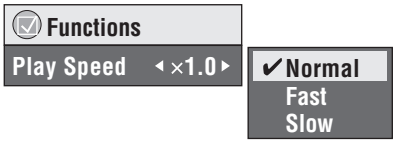
DVD-A –Still picture advance (Press [RETURN] to go back to page 1.)

Changing play speed

DVD-A (Motion picture part) RAM DVD-V

During play

Press [SHIFT]+[PLAY SPEED] several times to select "Normal", "Fast" or "Slow".



Changing play speed between the range of "×0.6" to "×1.4" (in 0.1 units)

Press [◄, ►] while the above message is displayed.

- Press [►] (play) to return to normal play.
- After you change the speed
  - Dolby Pro Logic II and Sound Enhancement do not work.
  - Audio output switches to 2ch.
  - Sampling frequency of 96 kHz is converted to 48 kHz.
  - Multi Re-master does not work.
- This function may not work depending on the disc's recording.

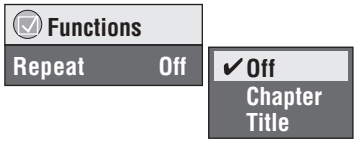
Repeat play

(Only when the elapsed play time can be displayed.
JPEG: Works with all JPEG content.)

During play

Press [REPEAT] several times to select an item to be repeated.

e.g. DVD-V



RAM: Program→All→Off

- During play list play: Scene→Playlist→Off

DVD-A: Track→Group※→Off

DVD-V: Chapter→Title※→Off

VCD CD: Track→All→Off

WMA MP3: Content→Group※→Off

JPEG: Group※→Off

※ "All" is displayed during all group (DVD-A), program and random play.

All group, Program and Random play

Except RAM

Press [PLAY MODE] while stopped.

All group, program and random playback screens appear sequentially.

All group (DVD-A)→ Program→ Random
↑← off (Normal play)※←┘

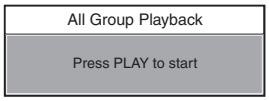
※Select "off" condition to exit the all group, program or random mode.

- Disable HighMAT disc play to use random and program play. Select "Play as Data Disc" in Other Menu (➜ page 19).
- DVD-A Some discs contain bonus groups. If a password screen appears after selecting a group, enter the password with the numbered buttons to play the bonus group. Refer also to the disc's jacket.

All group play

DVD-A

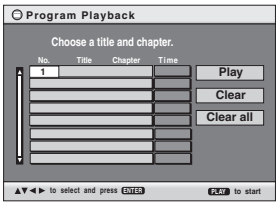
Press [►] (play).



Program play (up to 32 items)

1 **Press the numbered buttons to select the items (WMA MP3 JPEG then press [ENTER]).**

e.g. DVD-V



- Repeat this step to program other items.
- **To select a 2-digit number**
  e.g. To select 25: [≧10] ➜ [2] ➜ [5]
  WMA MP3 JPEG [2] ➜ [5] ➜ [ENTER]

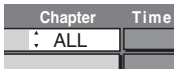
2 **Press [►] (play).**

To select an item using the cursor buttons

Press [ENTER] and [▲, ▼] to select an item, then press [ENTER] again to register.

To select all the items

e.g. DVD-V



While the "Chapter", "Track" or "Content" field is highlighted, press [▲, ▼] to select "ALL". Then press [ENTER] again to register.

To change the selected program

1 Press [▲, ▼] to select an item.
2 Repeat step 1 above.

To clear the selected program

1 Press [▲, ▼] to select an item.
2 Press [CANCEL] (or press [▲, ▼, ◄, ►] to select "Clear" and press [ENTER]).

To clear the whole program

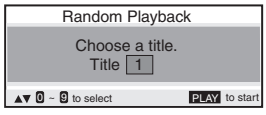
Press [▲, ▼, ◄, ►] to select "Clear all" and press [ENTER].
The whole program is also cleared when the unit is turned off, the disc tray is opened or another source is selected.

Random play

1 DVD-A DVD-V WMA MP3 JPEG

Press the numbered buttons to select a title or a group (WMA MP3 JPEG then press [ENTER]).

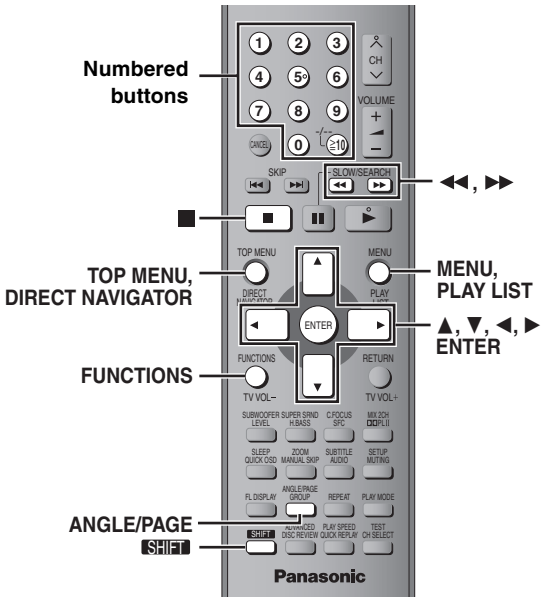
e.g. DVD-V



DVD-A

- To enter all groups, press [◄, ►] to select "All" and press [ENTER].
- To deselect a group, press the numbered buttons corresponding to the group you want to clear.

2 **Press [►] (play).**



Playing data discs

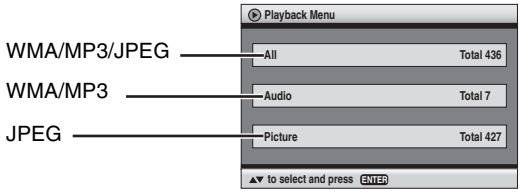
WMA MP3 JPEG

You can play JPEG files on DVD-RAM or play HighMAT discs without using the HighMAT function (➜ page 19, “Play as Data Disc” in Other Menu).

- Playing HighMAT™ discs (➜ page 17)

Playing items in order (Playback Menu)

1 **Press [TOP MENU].** e.g.



- **To exit the screen**
  Press [TOP MENU].

2 **Press [▲, ▼] to select “All”, “Audio” or “Picture” and press [ENTER].**

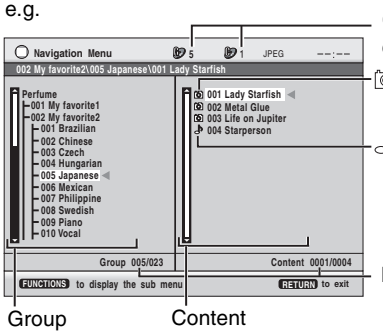
Playing from the selected item (Navigation Menu)

1 **Press [MENU].**

2 **Press [▲, ▼, ◀, ▶] to select the group and press [ENTER].**

3
To play content in the group in order
Press [ENTER].
To start play from the selected content
Press [▲, ▼] to select and [ENTER].

e.g.



Group and content number currently playing

:JPEG

:WMA/MP3

Number currently selected

- Press [SHIFT]+[ANGLE/PAGE] to skip page by page in the group or content field.
- **To enjoy listening to WMA/MP3 contents while showing a JPEG image on the screen**
  Select a JPEG file first, and then select audio contents. (The opposite order is not effective.)
- **To exit the screen**
  Press [MENU].

■ Using the submenu

1 **While the menu is displayed**
Press [FUNCTIONS].

2 **Press [▲, ▼] to select an item and press [ENTER].**
Items shown differ depending on the type of disc.

✓Multi	Groups and contents are displayed.
List	Contents only
Tree	Groups only
Thumbnail	Thumbnail images JPEG
Next group	To go to next group WMA MP3
Previous group	To go to previous group WMA MP3
All	WMA/MP3 and JPEG
Audio	WMA/MP3 only
Picture	JPEG only
Help display	To switch between guide messages and the elapsed play time indicator
Find	To search by content or group title (➜ below)

■ Searching by a content or group title

Highlight a group title to search the group, or a content title to search its content.

1 **While the submenu is displayed (➜ above)**
Press [▲, ▼] to select “Find” and press [ENTER].

2 **Press [▲, ▼] to select a character and press [ENTER].**

- Repeat to enter another character.
- Lower case is also searched.
- Press [◀◀, ▶▶] to skip between A, E, I, O and U.
- Press [◀] to erase a character.
- Leave the asterisk (∗) when you search for the titles including the character you enter.
- Erase the asterisk (∗) to search for the titles starting with the character you enter. To add the asterisk (∗) again, display the submenu again and select “Find”.

3 **Press [▶] to select “Find” and press [ENTER].**
The search result screen appears.

4 **Press [▲, ▼] to select the content or group and press [ENTER].**

Playing from the selected track in the CD

CD

Titles appear with CD Text disc playback.

1 **Press [TOP MENU] or [MENU].**

e.g. CD text

2 **Press [▲, ▼] to select the track and press [ENTER].**

- Press [SHIFT]+[ANGLE/PAGE] to skip page by page.
- Press [FUNCTIONS] to show the playback condition and current position.

To exit the screen
Press [TOP MENU] or [MENU].

Playing HighMAT™ discs

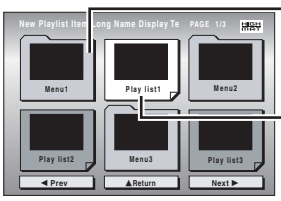
WMA MP3 JPEG

1 Press [TOP MENU].

2 Press [▲, ▼, ◄, ►] to select the item, then press [ENTER].

- Repeat this step if necessary.

e.g.



Menu: Takes you to the next menu which shows play lists or another menu

Play list: play starts

- **To change the menu background**
  Press [FUNCTIONS].
  The background changes to the one recorded on the disc.
- **To exit the screen**
  Press [■].

Selecting from the list

1 During play

Press [MENU].

e.g.

2 Press [◄] then [▲, ▼] to switch among "Playlist", "Group" and "Content" lists.

3 Press [►] then [▲, ▼] to select an item and press [ENTER].

- Press [SHIFT]+[ANGLE/PAGE] to skip page by page.

- **To exit the screen**
  Press [MENU].

Playing RAM discs

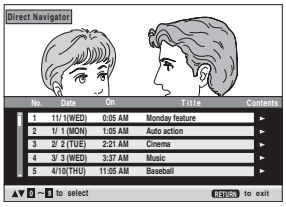
RAM

- Titles appear only if the titles are recorded on the disc.
- You cannot edit programs, play lists and disc titles.

Playing the programs

1 Press [DIRECT NAVIGATOR].

e.g.



- **To exit the screen**
  Press [DIRECT NAVIGATOR].

2 Press [▲, ▼] or the numbered buttons to select the program.

- Press [SHIFT]+[ANGLE/PAGE] to skip page by page.
- **To select a 2-digit number**
  e.g. 23: [≧10] ➜ [2] ➜ [3]
- Press [►] to show the contents of the program and the disc.

3 Press [ENTER].

Playing a play list

(Only when the disc contains a play list)

1 Press [PLAY LIST].

e.g.

- **To exit the screen**
  Press [PLAY LIST].

2 Press [▲, ▼] or the numbered buttons to select the play list.

- Press [SHIFT]+[ANGLE/PAGE] to skip page by page.
- **To select a 2-digit number**
  e.g. 23: [≧10] ➜ [2] ➜ [3]

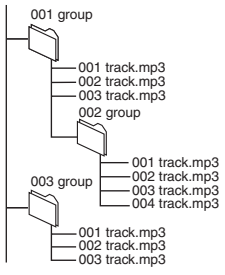
3 Press [ENTER].

Tips for making WMA/MP3 and JPEG discs (For CD-R, CD-RW)

- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- This unit supports multi-session but if there are a lot of sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.
- When there are more than 8 groups, the eighth group onwards will be displayed on one vertical line in the menu screen.
- There may be differences in the display order on the menu screen and computer screen.
- This unit cannot play files recorded using packet write.

Naming folders and files
(Files are treated as content and folders are treated as groups on this unit.)
At the time of recording, prefix folder and file names with 3-digit numbers in the order you want to play them (this may not work at times).
Files must have the extension:
".WMA" or ".wma"
".MP3" or ".mp3"
".JPG", ".jpg", ".JPEG" or ".jpeg"

e.g. MP3



WMA

- You cannot play WMA files that are copy protected.
- This unit does not support Multiple Bit Rate (MBR).

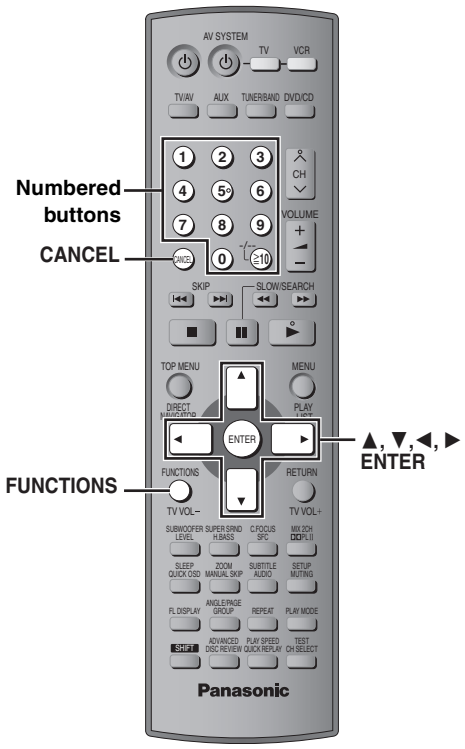
MP3

- This unit does not support ID3 tags.
- Compatible sampling rates: 8, 11.02, 12, 16, 22.05, 24, 32, 44.1 and 48 kHz.

JPEG

- To view JPEG files on this unit:
  – Take them on a digital camera that meets the DCF Standard (Design rule for Camera File system) Version 1.0. Some digital cameras have functions that are not supported by the DCF Standard Version 1.0 like automatic picture rotation which may render a picture unviewable.
  – Do not alter the files in any way or save them under a different name.
- This unit cannot display moving pictures, MOTION JPEG and other such formats, still pictures other than JPEG (e.g. TIFF) or play pictures with attached audio.

Using on-screen menus



1	FUNCTIONS	**Press once.**
2	Select Go to the next menu Register Return to the previous menu	**Select the menu.**
3	Select Register	**Make the settings.**
4	FUNCTIONS	**Press to exit.**

Items shown differ depending on the type of disc.

Main menu

Program **Group** **Title** **Chapter** **Track** **Playlist** **Content**	**To start from a specific item**
Time ※ Except +R/ +RW	**To skip incrementally or decrementally※ (Time Slip for play only)** 1 Press [ENTER] twice to show the Time Slip indicator. 2 Press [▲, ▼] to select the time and press [ENTER]. ●Press and hold [▲, ▼] to alter faster. **To start from a specific time※ (Time Search)** **To change remaining/elapsed time display**
Audio	(➜ page 14, Changing soundtracks) WMA MP3 **To display the current disc type**
Still Picture	**To switch still pictures**
Thumbnail	**To show thumbnail images**
Subtitle	(➜ page 15, Changing subtitles)
Marker (VR)	RAM **To recall a marker recorded on DVD-Video recorders** To recall a marker: Press [▲, ▼] ➜ Press [ENTER]
Angle	(with multiple angles) **To select the angle**
Rotate Picture	**To rotate picture**
Slideshow	**To turn on/off slideshow** **To change the slideshow timing (0–30 sec)**
Other Settings	(➜ page 19)

Play Speed	DVD-A (Motion picture part) RAM DVD-V **To change play speed** – from "×0.6" to "×1.4" (in 0.1 unit steps)

■ *Play Menu*

(Only when the elapsed play time can be displayed.
JPEG: Works with all JPEG content.)

Repeat	(➜ page 15, Repeat play)
A-B Repeat	Except JPEG RAM (Still picture part) **To repeat a specified section** Press [ENTER] at the starting and ending points. Press [ENTER] again to cancel.
Marker	Except RAM **To mark up to 5 positions to play again** Press [ENTER] (The unit is now ready to accept markers.) To mark a position: Press [ENTER] (at the desired point) To mark another position: Press [◄, ►] to select "∗" ➜ Press [ENTER] To recall a marker: Press [◄, ►] ➜ Press [ENTER] To erase a marker: Press [◄, ►] ➜ Press [CANCEL] ● This feature does not work during program and random play.
Advanced Disc Review	[➜ page 14, Reviewing titles to play (ADVANCED DISC REVIEW)]

■ *Picture Menu*

Picture Mode	**Normal** **Cinema1**: Mellows images and enhances detail in dark scenes. **Cinema2**: Sharpens images and enhances detail in dark scenes. **Animation** **Dynamic** **User** (Press [ENTER] to select "**Picture Adjustment**") (➜ below)
	Picture Adjustment **Contrast** **Brightness** **Sharpness** **Colour** **Gamma**: Adjusts the brightness of dark parts. **Depth Enhancer** Reduces the rough noise in the background to give a greater feeling of depth.
Video Output Mode	● PAL disc **576i** ※1 (or **625i** ※2) (Interlace) ⟷ **576p** ※1 (or **625p** ※2) (Progressive) ● NTSC disc **480i** ※1 (or **525i** ※2) (Interlace) ⟷ **480p** ※1 (or **525p** ※2) (Progressive) When you select "576p (or 625p)" or "480p (or 525p)", a confirmation screen appears. Select "Yes" only if connecting to a progressive output compatible television.
Transfer Mode	If you have chosen "576p (or 625p)" or "480p (or 525p)", (➜ above), select the method of conversion for video output to suit the type of material. When you play PAL discs **Auto**: Detects 25 frame-per-second film content and appropriately converts it. **Video**: Select when using Auto, and the video content is distorted. When you play NTSC discs **Auto1** (normal): Detects 24 frame-per-second film content and appropriately converts it. **Auto2**: Compatible with 30 frame-per-second film content in addition to 24 frame-per-second film content. **Video**: Select when using Auto1 or Auto2, and the video content is distorted.

※1 Australia and N.Z.
※2 The United Kingdom

■ *Audio Menu*

Dolby Pro Logic II	(➜ page 24, Dolby Pro Logic II)
Dialogue Enhancer	**To make the dialogue in movies easier to hear** DVD-V (Dolby Digital, DTS, MPEG, 3-channel or higher, with the dialogue recorded in the center channel) **On ⟷ Off**
Multi Re-master	RAM DVD-V (Discs recorded with 48 kHz only) DVD-A (Discs recorded with 44.1 kHz or 48 kHz only) VCD CD ● During 2ch output of these discs, this feature gives you a more natural sound by adding the higher frequency signals not recorded on the disc, for example, playing DVD-Video recorded with 48 kHz at 96 kHz. (Sampling frequency ➜ page 30) ● During multi-channel output of these discs, this feature reproduces the frequencies lost during recording to give you a sound closer to the original. WMA MP3 (Disc recording is other than 8 kHz, 16 kHz, 32 kHz) This feature reproduces the higher frequencies lost during recording to give you a sound closer to the original. **1 ⟷ 2 ⟷ 3 ⟷ Off** DVD-A DVD-V CD (LPCM/PPCM) 1 High tempo (e.g., pop and rock) 2 Various tempos (e.g., jazz) 3 Low tempo (e.g., classical) **Other discs** 1 Light effect 2 Medium effect 3 Strong effect ● You can confirm the sampling frequency on the screen.
Sound Enhancement	Enhances audio output to produce a warm hall-like sound. **On ⟷ Off**

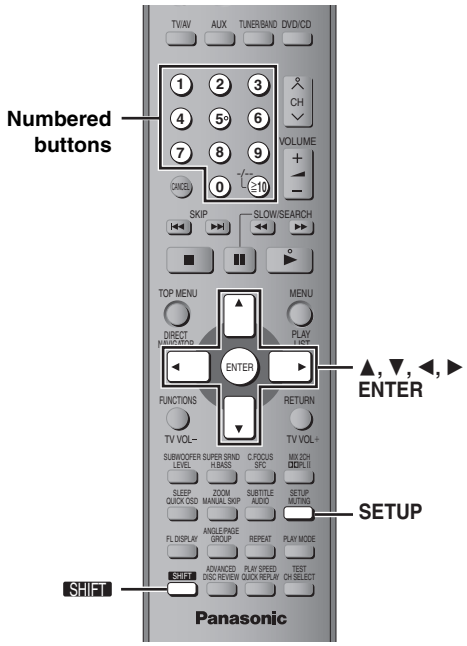
■ *Display Menu*

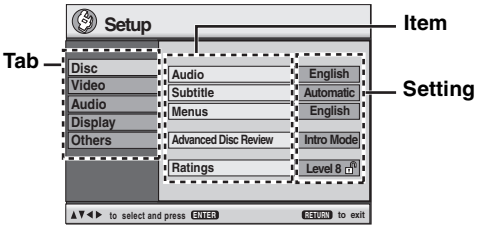
Information	JPEG **Off, Date, Details**
Subtitle Position	**0 to −60 (in 2 unit steps)**
Subtitle Brightness	**Auto, 0 to −7**
Just Fit Zoom	**To select the appropriate screen size to fit your TV screen**
Manual Zoom	**To zoom in and out manually**
Bit Rate Display	RAM DVD-V VCD DVD-A (Motion picture part) **On ⟷ Off**
GUI See-through	**Off, On, Auto**
GUI Brightness	**−3 to +3**

■ *Other Menu*

Setup	(➜ page 20)
Play as DVD-Video or **Play as DVD-Audio**	Select "Play as DVD-Video" to play DVD-Video contents of DVD-Audio.
Play as DVD-VR, Play as HighMAT or **Play as Data Disc**	Select "Play as Data Disc" to play JPEG files on DVD-RAM or to play a HighMAT disc without using the HighMAT function.

Changing the player settings





- The settings remain intact even if you switch the unit to standby.
- Underlined items are the factory preset in the following diagram.

1 SHIFT + SETUP MUTING

Show the Setup menu.
If you have not set QUICK SETUP (➜ page 9), the QUICK SETUP screen appears.

2 Select / Go right

Select the tab.

3 Select / Register

Select the item.

4 Select / Register

Make the settings.

5 SHIFT + SETUP MUTING

Press to exit.

QUICK SETUP enables successive settings of the items in the shaded area.

■ *"Disc" tab*

Audio Choose the audio language.	●<u>English** ●(Language options)[※1] ●Original[※2] ●Other∗∗∗∗[※3]
Subtitle Choose the subtitle language.	●<u>Automatic</u>[※4] ●English ●(Language options)[※1] ●Other∗∗∗∗[※3]
Menus Choose the language for disc menus. Changing the menu language in QUICK SETUP also changes this setting.	●<u>English</u> ●(Language options)[※1] ●Other∗∗∗∗[※3]
Advanced Disc Review (➜ page 14)	●<u>Intro Mode</u>: Reviews each title/program. ●Interval Mode: Reviews not only each title/program but also each 10 minute interval within a title/program.
Ratings Set a ratings level to limit DVD-Video play.	Setting ratings (When level 8 is selected) ●<u>8 No Limit</u> ●1 to 7 ●0 Lock All: To prevent play of discs without ratings levels. When you select your ratings, a password screen is shown. Follow the on-screen instructions. **Do not forget your password.** A message screen will be shown if a DVD-Video exceeding the ratings level is inserted in the unit. Enter your password and then follow the on-screen instructions.

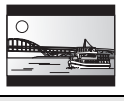
[※1] Language options
Australia and N.Z.: French, German, Italian, Spanish, Portuguese, Russian and Dutch
The United Kingdom: French, German, Italian, Spanish, Polish, Swedish and Dutch

[※2] The original language designated on the disc is selected.

[※3] Input a code number referring to the table on page 31.

[※4] If the language selected for "Audio" is not available, subtitles appear in that language (if available on the disc).

■ *"Video" tab*

TV Aspect Choose the setting to suit your television and preference.	●<u>4:3 Pan&Scan</u>: Regular aspect television (4:3) The sides of the widescreen picture are cut off so it fills the screen (unless prohibited by the disc).
	●4:3 Letterbox: Regular aspect television (4:3) Widescreen picture is shown in the letterbox style. 
	●16:9: Widescreen television (16:9)

TV Type Select to suit the type of television.	●Standard (Direct View TV) ●CRT Projector ●LCD TV/Projector ●Projection TV ●Plasma TV
Time Delay When connected with a Plasma display, adjust if you notice the audio is out of sync with the video.	●0ms ●20ms ●40ms ●60ms ●80ms ●100ms
Video Out (AV/Component)[*5] Choose the video signal format to be output from the SCART (AV) and Component terminal.	●Video/YPbPr ●S-Video/YPbPr ●RGB/No Output
Still Mode Specify the type of picture shown when paused.	●Automatic ●Field: The picture is not blurred, but picture quality is lower. ●Frame: Overall quality is high, but the picture may appear blurred.
NTSC Disc Output Choose PAL 60 or NTSC output when playing NTSC discs (➜ page 11, Video systems)	●PAL60: When connected to a PAL television. ●NTSC: When connected to an NTSC television.

[*5] **The United Kingdom**

■ *"Audio" tab*

Dynamic Range Compression	●Off ●On: Adjusts for clarity even when the volume is low by compressing the range of the lowest sound level and the highest sound level. Convenient for late night viewing. (Only works with Dolby Digital)
Speaker Settings (➜ below) Set the delay time for your center and surround speakers.	●Center: 0.0/1.0/2.0/3.0/4.0/5.0 ms ●Surround (L/R): 0.0/5.0/10.0/15.0 ms

■ *"Display" tab*

Menu Language	[*6] ●English ●Français ●Deutsch ●Italiano ●Español ●Português ●Русский ●Nederlands [*7] ●English ●Français ●Deutsch ●Italiano ●Español ●Polski ●Svenska ●Nederlands
On-Screen Messages	●On ●Off

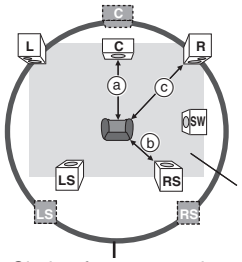
[*6] **Australia and N.Z.** [*7] **The United Kingdom**

■ *"Others" tab*

FL Dimmer Changes the brightness of the unit's display.	●Bright ●Dim ●Auto: The display is dimmed, but brightens when you perform some operations.
QUICK SETUP	●Yes ●No
Re-initialise Setting This returns all values in the Setup menus to the default settings.	●Yes: The password screen is shown if "Ratings" (➜ page 20) is set. Please enter the same password. After "INIT" on the display disappears, turn the unit off and on again. ●No

Changing the delay time (Speaker Settings)

(Effective when playing multi-channel audio)
(Center and surround speakers only)
For optimum listening with 5.1-channel sound, all the speakers, except for the subwoofer, should be the same distance from the seating position. If you have to place the center or surround speakers closer to the seating position, adjust the delay time to make up for the difference.



: Actual speakers position

: Ideal speakers position

ⓐ ⓑ ⓒ : Primary listening distance

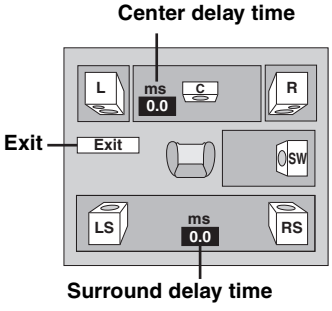
Approximate room dimensions

Circle of constant primary listening distance

If either distance ⓐ or ⓑ is less than ⓒ, find the difference in the table and change to the recommended setting.

ⓐ **Center speaker**		ⓑ **Surround speaker**	
Difference (Approx.)	Setting	Difference (Approx.)	Setting
30 cm	1.0 ms	150 cm	5.0 ms
60 cm	2.0 ms	300 cm	10.0 ms
90 cm	3.0 ms	450 cm	15.0 ms
120 cm	4.0 ms		
150 cm	5.0 ms		

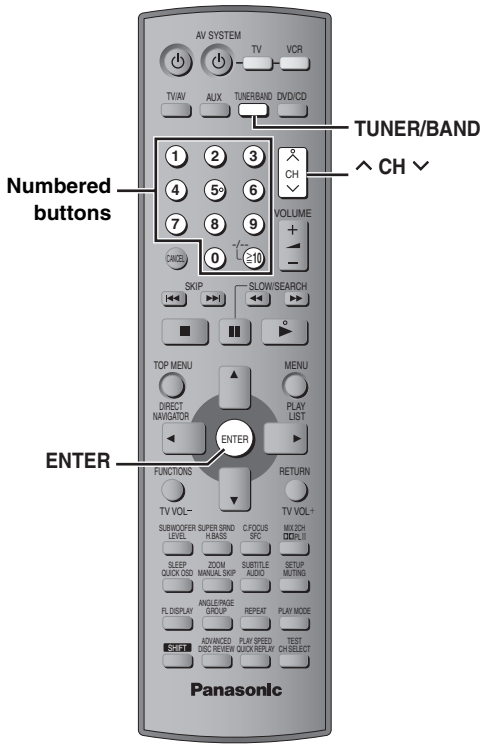
1 Press [▲, ▼] to select the delay time box and press [ENTER].
2 Press [▲, ▼] to adjust the delay time and press [ENTER].



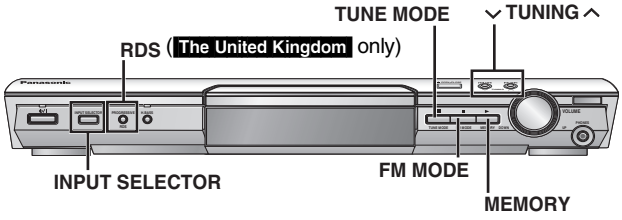
To finish the speaker setting
Press [◀] to select "Exit" and press [ENTER].

When you change the surround speaker setting for Dolby Digital, the setting also changes for Dolby Pro Logic II.
e.g., the settings for MUSIC are the same as those for Dolby Digital.

Dolby Digital	**Dolby Pro Logic II**	
	MUSIC	**MOVIE**
0 ms	0 ms	10 ms
5 ms	5 ms	15 ms
10 ms	10 ms	20 ms
15 ms	15 ms	25 ms



The illustration shows the model for the United Kingdom.



Automatic presetting

Main unit only

Up to 15 stations can be set in each band, FM and AM.

1 Press [INPUT SELECTOR] to select "FM" or "AM".

2 Press [TUNE MODE] to select "MANUAL".

Each time you press the button: MANUAL⟷PRESET

3 Press [∨ TUNING ∧] to tune to the lowest frequency (FM: 87.50, AM: 522).

4 Press and hold [MEMORY].

Release the button when "FM AUTO" or "AM AUTO" is displayed.

The tuner presets all the stations it can receive into the channels in ascending order.

- "SET OK" is displayed when the stations are set, and the radio tunes to the last preset station.
- "ERROR" is displayed when automatic presetting is unsuccessful. Preset the channels manually (➜ right).

Selecting the preset channels

1 Press [TUNER/BAND] to select "FM" or "AM".

2 Press the numbered buttons to select the channel.

Alternatively, press [∧ CH ∨].

To select a 2-digit number

e.g. 12: [≧10] ➜ [1] ➜ [2]

When a stereo FM broadcast is being received.

■ If noise is excessive in FM

Main unit only

Press [FM MODE] to display "MONO".

Press [FM MODE] again to cancel the mode.
The mode is also canceled when you change the frequency.

Manual tuning

Main unit only

1 Press [INPUT SELECTOR] to select "FM" or "AM".

2 Press [TUNE MODE] to select "MANUAL".

3 Press [∨ TUNING ∧] to select the frequency.

Press and hold [∨ TUNING ∧] until the frequency starts scrolling to start automatic tuning. Tuning stops when a station is found.

■ Presetting the channel

Up to 15 stations can be set in each band, FM and AM.

1 While listening to the radio broadcast

Press [ENTER].

2 While the frequency and "PGM" are flashing on the display

Press the numbered buttons to select a channel.

Alternatively, press [∧ CH ∨], then press [ENTER]

- **To select a 2-digit number**

e.g. 12: [≧10] ➜ [1] ➜ [2].

The station occupying a channel is erased if another station is preset to that channel.

RDS broadcasting

The United Kingdom

The unit can display the text data transmitted by the radio data system (RDS) available in some areas.
If the station you are listening to is transmitting RDS signals, “RDS” will light up on the display.

Press [RDS] on the main unit or [FUNCTIONS] on the remote control to display the text data.

Each time you press the button:
PS (factory preset)→PTY→ Frequency display
↑——————————————————————————————————┘

PTY displays			
NEWS	VARIED	FINANCE	COUNTRY
AFFAIRS	POP M	CHILDREN	NATIONAL
INFO	ROCK M	SOCIAL A	OLDIES
SPORT	M.O.R. M※	RELIGION	FOLK M
EDUCATE	LIGHT M	PHONE IN	DOCUMENT
DRAMA	CLASSICS	TRAVEL	TEST
CULTURE	OTHER M	LEISURE	ALARM
SCIENCE	WEATHER	JAZZ	

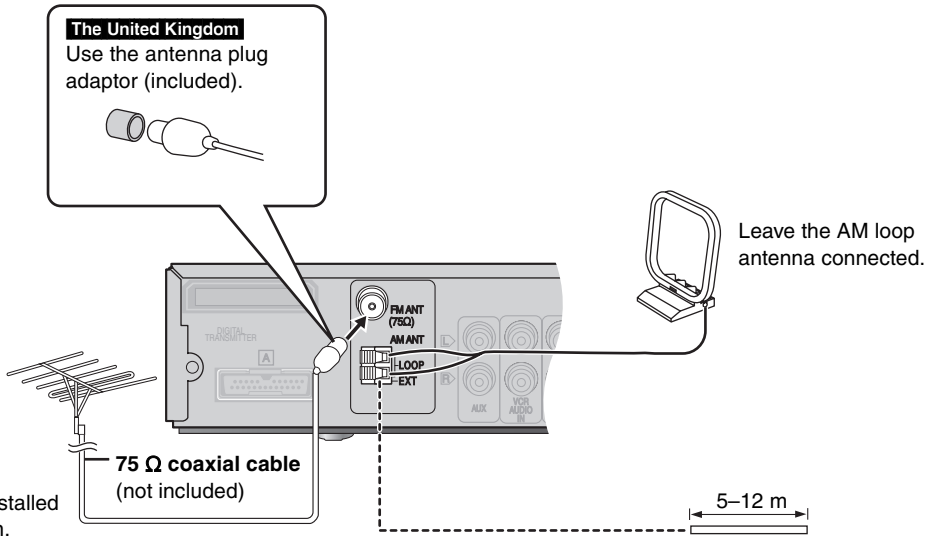
※“M.O.R. M”=Middle of the road music

Note

RDS displays may not be available if reception is poor.

Optional antenna connections

Use outdoor antennas if radio reception is poor.
- Disconnect the antenna when the unit is not in use.
- Do not use the outdoor antenna during an electrical storm.



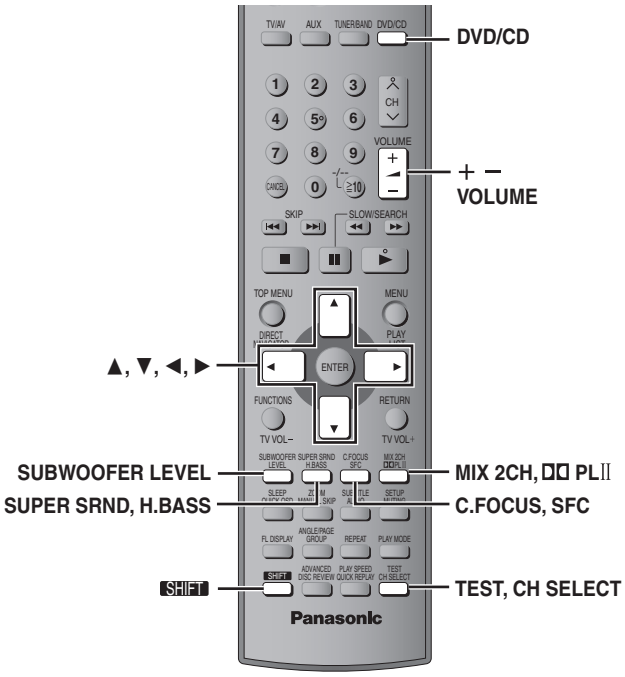
FM outdoor antenna (Using a television antenna)

- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

AM outdoor antenna (Using a vinyl wire)

Run a piece of vinyl wire horizontally across a window or other convenient location.

Sound field and sound quality



Note
- When connected with headphones, the following sound field systems have no effect. (Excluding Sound Field Control)
- You may experience a reduction in sound quality when these sound field systems are used with some sources. If this occurs, turn the sound field system off.
- If you turn on Super Surround, Dolby Pro Logic II is canceled and vice versa.

Sound Field Control

C.FOCUS SFC

Changes the sound quality.

Press [SFC].

Each time you press the button:
FLAT: Cancel (no effect is added) (factory preset).
HEAVY: Adds punch to rock.
CLEAR: Clarifies higher sounds.
SOFT: For background music.
DISCO: Reverberates sound to make you feel like you are in a disco.
LIVE: Makes vocals more alive.
HALL: Expands sound to make you feel like you are in a hall.

To check the current setting
Press [SFC].

Super Surround

SHIFT + SUPER SRND H.BASS

Adds surround effects to stereo sound.

Press [SHIFT]+[SUPER SRND].

Each time you press the button:
MUSIC: Adds surround effects to stereo sources.
MOVIE: Use this mode when playing movie software.
PARTY: Sound is in stereo regardless of the direction you are facing.
OFF: Cancel

- You can adjust the volume of the surround speakers to get the best surround effect (➜ page 25, Speaker level adjustments).
- Super Surround does not work when playing a DVD recorded with a multi-channel source.

Center Focus

SHIFT + C.FOCUS SFC

(Discs where the dialogue is recorded in the center channel)
You can make the sound of the center speaker seem like it is coming from within the television.

Press [SHIFT]+[C.FOCUS].

Each time you press the button:
C FOCUS ON⟷C FOCUS OFF

- This does not work when Super Surround is turned on.
- This also works when Dolby Pro Logic II is turned on.

Dolby Pro Logic II

MIX 2CH DD PLII

Dolby Pro Logic II is an advanced decoder that derives 5-channel surround (Left and Right Front, Center, Left and Right Surround) from any stereo program material, whether or not it has been specifically Dolby Surround encoded.

Press [DD PLII].

Each time you press the button:
MOVIE: Movie software, recorded in Dolby Surround.
MUSIC: Stereo sources
OFF: Cancel

- This works only in DVD/CD mode.
- "DD PLII" lights when there is effect.

Down-mixing

SHIFT + MIX 2CH DD PLII

You can output the down-mixed 2 channel signals when necessary .

Press [SHIFT]+[MIX 2CH].

Each time you press the button:
MIX 2CH ON⟷MIX 2CH OFF

- When "D.MIX" flashes on the display, the disc contains multiple-channel signals that cannot be down-mixed. **DVD-A**

Enhancing the bass sound

SUPER SRND H.BASS

You can enhance low-frequency sound so that heavy bass sound can be heard clearly, even if the acoustics of your room are not optimal. The unit automatically selects the most suitable setting according to the type of playing source.

Press [H.BASS].

H.BASS indicator lights on the main unit.

●When DVD-Video or DVD-RAM is selected
H. BASS ON (factory preset)⟷H. BASS OFF
●When another source is selected
H. BASS OFF (factory preset)⟷H. BASS ON

The setting you make is retained, and recalled every time you play the same type of source.

Subwoofer level

SUBWOOFER LEVEL

You can adjust the amount of bass. The unit automatically selects the most suitable setting according to the type of playing source.

Press [SUBWOOFER LEVEL].

●When DVD-Video or DVD-RAM is selected
SUB W 4 (factory preset)→SUB W 1→SUB W 2→SUB W 3
↑_____↓

●When another source is selected
SUB W 2 (factory preset)→SUB W 3→SUB W 4→SUB W 1
↑_____↓

The setting you make is retained, and recalled every time you play the same type of source.

Speaker level adjustments

SHIFT + TEST CH SELECT

This is one of the ways to get appropriate surround effects.
Preparation
Press [DVD/CD].

1 **While stopped and no on-screen display is shown**

Press [SHIFT]+[TEST] to output a test signal.

L: Front left C: Center R: Front right
RS: Right surround LS: Left surround

●There is no output from SW (subwoofer) channel.

2 **Press [VOLUME, +] or [−] to set the volume level normally used for listening.**

3 **Press [▲] (increase) or [▼] to adjust the speaker level for each speaker.**

C, RS, LS: −6 dB to +6 dB
(L, R: Only the balance is adjustable.)
●To adjust the balance of the front speakers
While outputting the test signal, press [◄, ►].
●Adjust the speaker level to the same level as the front speakers.

To stop the test signal
Press [SHIFT]+[TEST] again.

■ To adjust speaker level during play

(Effective when playing multi-channel audio or when Dolby Pro Logic II or Super Surround is on.)

1 **Press [CH SELECT] to select the speaker.**

L →C →R →RS →LS →SW
↑_____↓

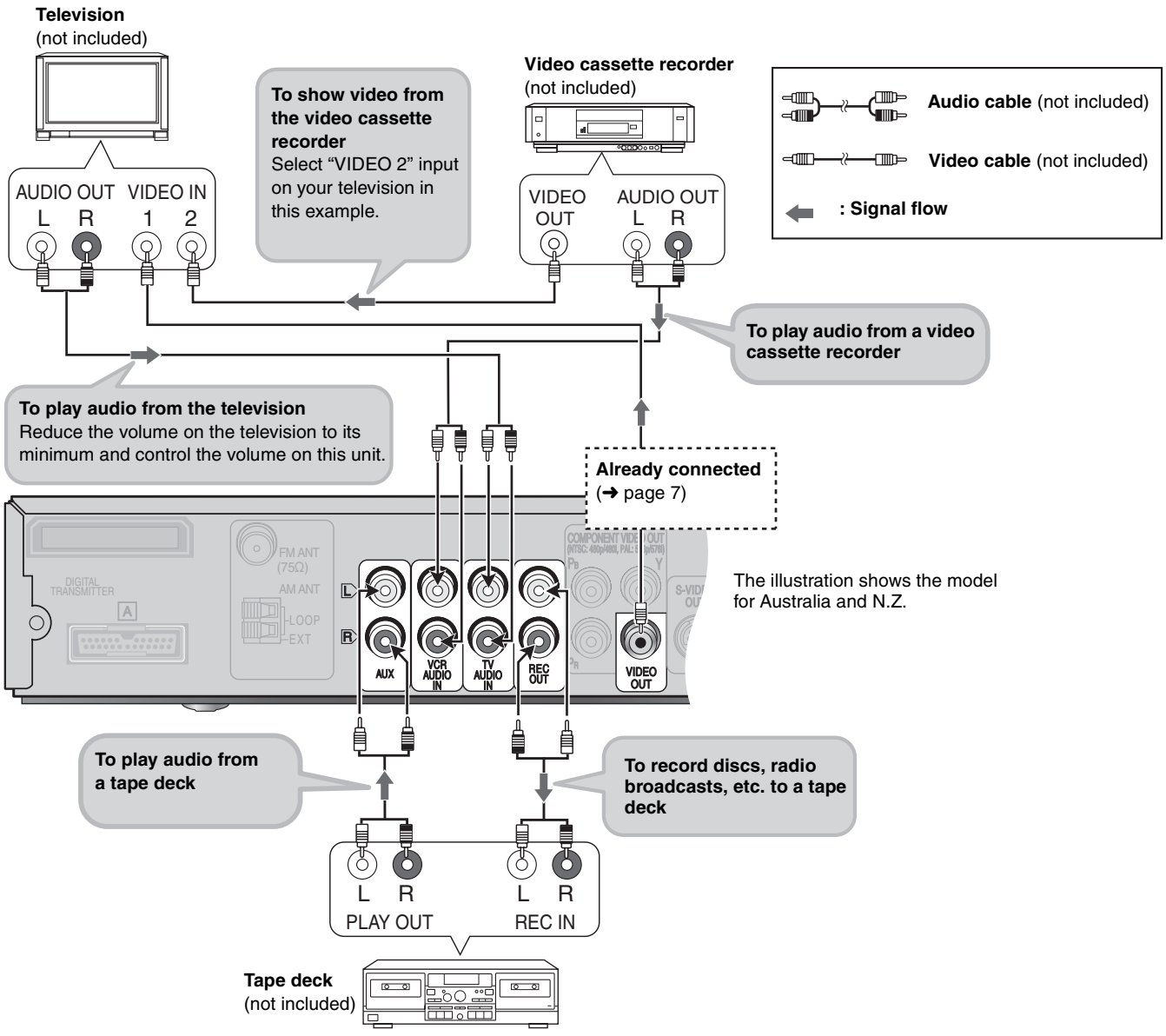
SW: Subwoofer

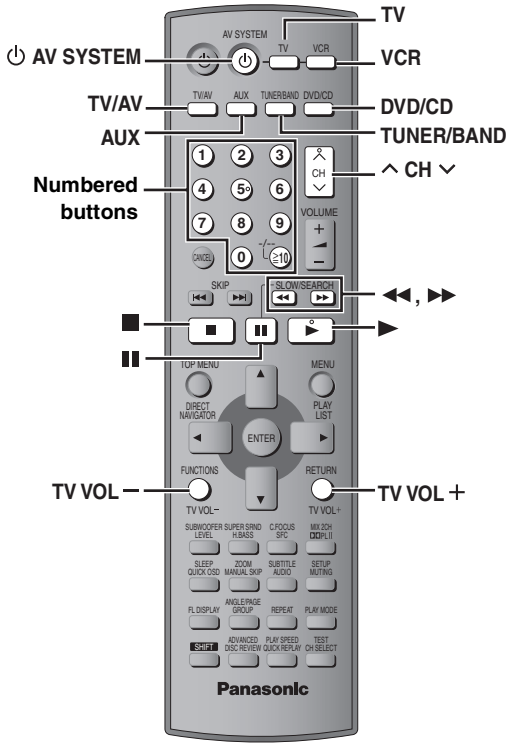
●You can adjust SW only if the disc includes a subwoofer channel.
●"SW" does not appear on the display and is not adjustable when Dolby Pro Logic II is turned on.
●"S" appears on the display when "MUSIC" or "MOVIE" is selected with Super Surround (➜ page 24). In this case, you can adjust both surround speaker levels at the same time using [▲, ▼].
S: −6 dB to +6 dB

2 **Press [▲] (increase) or [▼] (decrease) to adjust the speaker level for each speaker.**

C, RS, LS, SW: −6 dB to +6 dB
(L, R: Only the balance is adjustable.)
●To adjust the balance of the front speakers
While "L" or "R" is selected, press [◄, ►].

■ Connection example


Television
(not included)
AUDIO OUT
L R
VIDEO IN
1 2
To show video from the video cassette recorder
Select "VIDEO 2" input on your television in this example.
Video cassette recorder
(not included)
VIDEO OUT
AUDIO OUT
L R
Audio cable (not included)
Video cable (not included)
: Signal flow
To play audio from a video cassette recorder
To play audio from the television
Reduce the volume on the television to its minimum and control the volume on this unit.
Already connected
(➜ page 7)
The illustration shows the model for Australia and N.Z.
To play audio from a tape deck
To record discs, radio broadcasts, etc. to a tape deck
L R
PLAY OUT
L R
REC IN
Tape deck
(not included)



Operating the television and the video cassette recorder

You can use the remote control to operate a Panasonic television or a video cassette recorder. Connect your equipment referring to "Connection example" (➜ page 26).

Note
The remote control may not work properly with some models.

Television

Preparation
Aim the remote control at the unit and press [TV] to light up the button, and then aim it at the television for the following operations:

Turning the television on/off
Press [⏻ AV SYSTEM].

Switching the television's video input mode
Press [TV/AV].

Changing channels
Press [∧ CH ∨].

Adjusting the volume
Press [TV VOL−] or [TV VOL+].

Video cassette recorder

Preparation
- Change the video input mode on the television ("VIDEO 2" in the example).
- Aim the remote control at the unit and press [VCR] to light up the button, and then aim it at the video cassette recorder for the following operations:

Turning the video cassette recorder on/off
Press [⏻ AV SYSTEM].

Play, pause and stop
Press [▶] (play), [❚❚] or [■].

Fast forward and rewind
Press [◀◀] or [▶▶].

Connecting a laser disc or record player

Connect instead of a video cassette recorder (➜ page 26) and select "VCR" as the source.

We recommend using a record player with a built-in phono equalizer. If your player doesn't have a built-in equalizer, connect it first to a separate equalizer and then to the unit.

Changing the remote control code

This remote control can also operate some other brands of televisions and video cassette recorders. Change the code to operate such equipment (➜ right).

Aim the remote control at the equipment.

While pressing [TV] or [VCR]

Press a numbered button to enter the first digit, and then the second digit.

The remote control outputs the on/off signal. If the code is correct, the equipment turns on or off. If it doesn't, try entering another code.

Note
Reenter the codes after you change the batteries.

Operating the tape deck

Recording to the tape deck

1 Press [DVD/CD] to select "DVD/CD".

or

Press [TUNER/BAND] to select "FM" or "AM".

2 Start recording and play.

Listening to the tape deck

Press [AUX] to select "AUX" as the source.

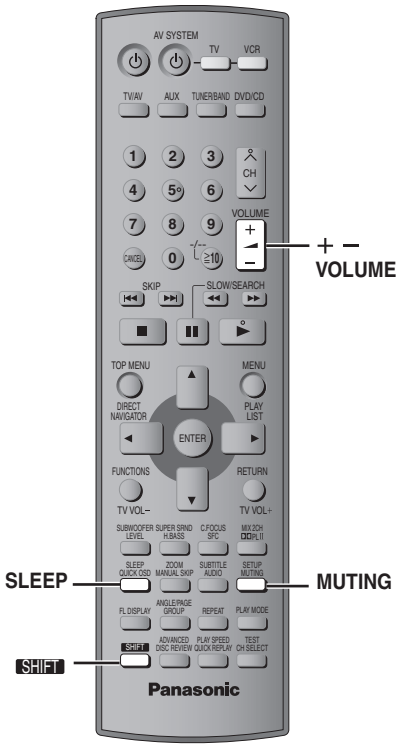
Television code list

PANASONIC:	01, 29, 30, 31
AKAI:	07, 11, 28, 36, 37
ALBA:	05, 11, 12
BAUR:	32
BLAUPUNKT:	28, 36
BRANDT:	26, 41
BUSH:	02, 05, 10, 11, 12, 32, 38
DAEWOO:	11, 12, 32
DUAL:	32
FERGUSON:	11, 12
FINLUX:	11, 12, 22, 23, 24, 25, 40
FISHER:	37
FUNAI:	02, 38
GOLDSTAR:	11, 12
GOODMANS:	11, 12, 25, 32
GRUNDIG:	28, 36
HITACHI:	01, 09, 26, 41
ICE:	21, 39
INNO HIT:	34
ITT/NOKIA:	05, 07, 37
JVC:	18
KENDO:	40
LOEWE:	14, 33
LOEWE OPTA:	32
LUXOR:	37
MATSUI:	02, 05, 06, 07, 10, 11, 12, 25, 37, 38
MITSUBISHI:	14, 19, 28, 36
NOKIA:	05, 07, 37
NORDMENDE:	26, 41
OCEANIC:	27, 35
ORION:	02, 03, 05, 10, 11, 12, 38
PHILIPS:	11, 12, 13, 15
PHONOLA	11, 12
RADIOLA:	11, 12
ROADSTAR:	39
SABA:	26, 41
SALORA:	07, 37
SAMSUNG:	11, 12, 15, 21, 25, 34, 39
SANYO:	07, 17, 25, 37
SCHNEIDER:	11, 12
SEG:	39, 40
SELECO:	11, 24
SHARP:	17, 20
SIEMENS:	11, 12, 17, 28, 36
SINUDYNE:	02, 05, 11, 12, 22, 24, 38, 40
SONY:	16
THOMSON:	05, 26, 41
THORN:	06, 08, 11, 12, 14, 16, 25, 32
TOSHIBA:	03, 04, 06, 08
UNIVERSUM:	39
WHITE WESTING HOUSE:	11, 12, 22, 40

Video cassette recorder code list

PANASONIC:	01, 29, 30
AKAI:	06, 08, 16, 17, 19, 37
ALBA:	02, 06, 23
BAIRD:	08, 10, 37
BLAUPUNKT:	01, 26, 29, 30, 33
BUSH:	02, 09, 23
DAEWOO:	15
FERGUSON:	31
FISHER:	05, 07, 10, 11, 12
GOLDSTAR/LG:	03, 04, 36, 37
GOODMANS:	02, 03, 18, 23, 27, 33
GRUNDIG:	02, 23, 26, 28, 32, 33
HCM:	02, 23
HITACHI:	13, 14
ITT:	08, 10, 11, 37
ITT/NOKIA:	18, 27, 37
JVC:	20, 21
KENDO:	08, 09, 37
LOEWE:	03, 32
LUXOR:	08, 10, 11, 17, 19, 37
MATSUI:	03, 05, 09
METZ:	01
MITSUBISHI:	17, 19, 21, 32
NEC:	04, 21, 36, 37
NOKIA:	08, 10, 11, 18, 22, 27, 37
NORDMENDE:	20, 21
OKANO:	06
ORION:	05, 09
PHILIPS:	22, 32, 33, 34, 35
PHONOLA:	32
RFT:	33
ROADSTAR:	02, 03, 18, 23, 27
SABA:	21
SALORA:	08, 11, 17, 19, 37
SAMSUNG:	15, 16, 18, 27
SANYO:	07, 10, 11
SCHAUB LORENZ:	10
SCHNEIDER:	02, 03, 18, 23, 27, 32
SEG:	02, 18, 23, 27
SHARP:	22
SIEMENS:	03, 10, 11, 32
SONY:	24, 25, 26
THOMSON:	21
THORN:	10
TOSHIBA:	15, 17, 19, 32
UNIVERSUM:	03, 08, 32, 37

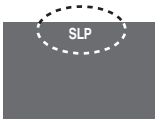
Other useful functions



SHIFT + SLEEP QUICK OSD — Sleep timer

Press [SHIFT]+[SLEEP] to select the time (in minutes).

SLEEP 30 → SLEEP 60 → SLEEP 90 → SLEEP 120 → OFF → (SLEEP 30)



To cancel the timer
Press [SHIFT]+[SLEEP] to select “OFF”.

To confirm the remaining time
Press [SHIFT]+[SLEEP] again.

To change the setting
Repeat the procedure from the beginning.

SETUP MUTING — Muting

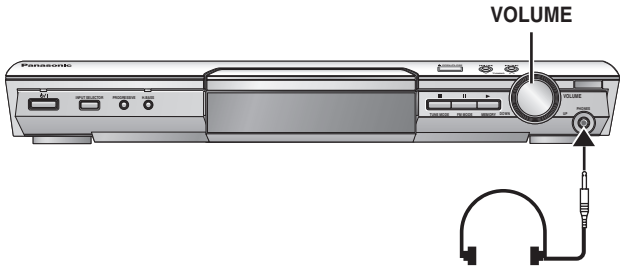
Press [MUTING].
“MUTING” flashes on the unit’s display.

To cancel
- Press [MUTING] again or reduce the volume to minimum (– – dB), then raise it to the required level.
- Muting is canceled when you switch the unit to standby.

Using headphones

Main unit only

1 Reduce the volume and connect the headphones (not included).
Headphone plug type: 3.5 mm stereo



2 Adjust headphone volume with [VOLUME].
- Audio is automatically switched to stereo (2-channel).

Note
Avoid listening for prolonged periods of time to prevent hearing damage.

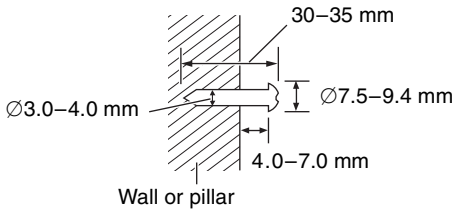
Other speaker setup options

■ Attaching to a wall

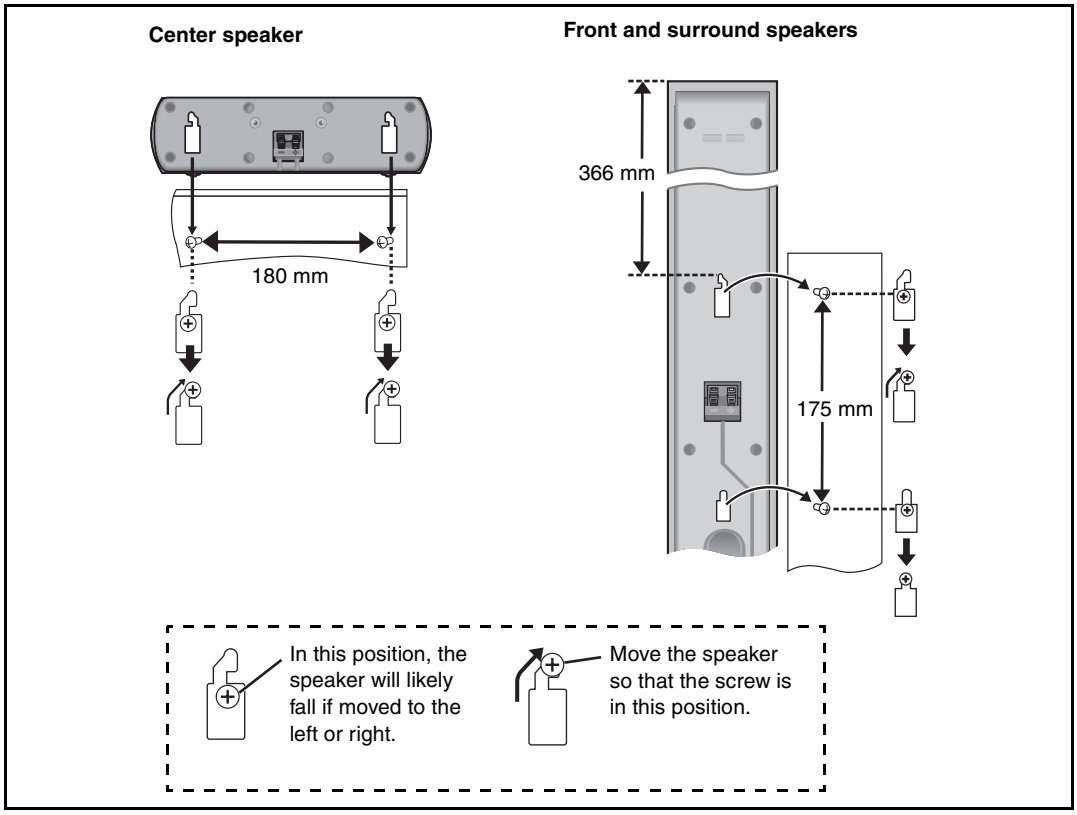
You can attach all of the speakers to a wall.

❶ Drive a screw (not included) into the wall.

❷ Fit the speaker securely onto the screw(s) with the hole(s).



- The wall or pillar on which the speakers are to be attached should be capable of supporting 10 kg per screw. Consult a qualified building contractor when attaching the speakers to a wall. Improper attachment may result in damage to the wall and speakers.
- When mounting the front or surround speakers to a wall, we recommend using a string (not included) to prevent it from falling (➜ page 4).
- Use of optional speaker cables is recommended for wall-mounted front or surround speakers. (You can also remove the speaker cables from the pipes supplied with this system).


Center speaker
Front and surround speakers
180 mm
366 mm
175 mm
In this position, the speaker will likely fall if moved to the left or right.
Move the speaker so that the screw is in this position.

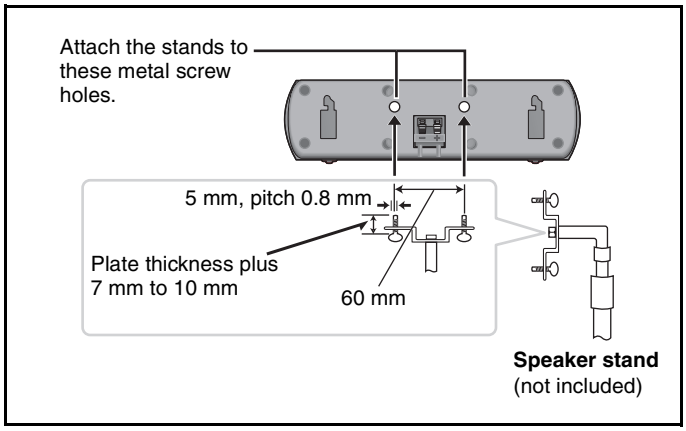
■ Fitting speaker stands (not included)

(Center speaker only)

Ensure the stands meet these conditions before purchasing them.

Note the diameter and length of the screws and the distance between screws as shown in the diagram.

- The stands must be able to support over 10 kg.
- The stands must be stable even if the speakers are in a high position.


Attach the stands to these metal screw holes.
5 mm, pitch 0.8 mm
Plate thickness plus 7 mm to 10 mm
60 mm
Speaker stand
(not included)

Glossary

Decoder
A decoder restores the coded audio signals on DVD's to normal. This is called decoding.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio. A large amount of audio information can be recorded on one disc using this method.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters around the world. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.

Frame still and field still
Frames are the still pictures that go together to make a moving picture. There are about 30 frames shown each second.
One frame is made up of two fields. A regular television shows these fields one after the other to create frames.
A still is shown when you pause a moving picture. A frame still is made up of two alternating fields, so the picture may appear blurred, but overall quality is high.
A field still is not blurred, but it has only half the information of a frame still so picture quality is lower.

I/P/B
MPEG 2, the video compression standard adopted for use with DVD-Video, codes frames using these 3 picture types.
I: Intra coded picture
This picture has the best quality and is the best to use when adjusting the picture.
P: Predictive coded picture
This picture is calculated based on past I or P-pictures.
B: Bidirectionally-predictive coded picture
This picture is calculated by comparing past and future I and P-pictures so it has the lowest volume of information.

Linear PCM (pulse code modulation)
These are uncompressed digital signals, similar to those found on CDs.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

Maintenance

Clean this unit with a soft, dry cloth.
- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, carefully read the instructions that came with the cloth.

Do not use commercially available lens cleaners as they may cause malfunction. (Cleaning of the lens is generally not necessary although this depends on the operating environment.)

Before moving the unit, ensure the disc tray is empty.
Failure to do so will risk severely damaging the disc and the unit.

Language code list

Abkhazian:	6566	Finnish:	7073	Macedonian:	7775	Somali:	8379
Afar:	6565	French:	7082	Malagasy:	7771	Spanish:	6983
Afrikaans:	6570	Frisian:	7089	Malay:	7783	Sundanese:	8385
Albanian:	8381	Galician:	7176	Malayalam:	7776	Swahili:	8387
Ameharic:	6577	Georgian:	7565	Maltese:	7784	Swedish:	8386
Arabic:	6582	German:	6869	Maori:	7773	Tagalog:	8476
Armenian:	7289	Greek:	6976	Marathi:	7782	Tajik:	8471
Assamese:	6583	Greenlandic:	7576	Moldavian:	7779	Tamil:	8465
Aymara:	6588	Guarani:	7178	Mongolian:	7778	Tatar:	8484
Azerbaijani:	6590	Gujarati:	7185	Nauru:	7865	Telugu:	8469
Bashkir:	6665	Hausa:	7265	Nepali:	7869	Thai:	8472
Basque:	6985	Hebrew:	7387	Norwegian:	7879	Tibetan:	6679
Bengali; Bangla:	6678	Hindi:	7273	Oriya:	7982	Tigrinya:	8473
Bhutani:	6890	Hungarian:	7285	Pashto, Pushto:	8083	Tonga:	8479
Bihari:	6672	Icelandic:	7383	Persian:	7065	Turkish:	8482
Breton:	6682	Indonesian:	7378	Polish:	8076	Turkmen:	8475
Bulgarian:	6671	Interlingua:	7365	Portuguese:	8084	Twi:	8487
Burmese:	7789	Irish:	7165	Punjabi:	8065	Ukrainian:	8575
Byelorussian:	6669	Italian:	7384	Quechua:	8185	Urdu:	8582
Cambodian:	7577	Japanese:	7465	Rhaeto-Romance:	8277	Uzbek:	8590
Catalan:	6765	Javanese:	7487	Romanian:	8279	Vietnamese:	8673
Chinese:	9072	Kannada:	7578	Russian:	8285	Volapük:	8679
Corsican:	6779	Kashmiri:	7583	Samoan:	8377	Welsh:	6789
Croatian:	7282	Kazakh:	7575	Sanskrit:	8365	Wolof:	8779
Czech:	6783	Kirghiz:	7589	Scots Gaelic:	7168	Xhosa:	8872
Danish:	6865	Korean:	7579	Serbian:	8382	Yiddish:	7473
Dutch:	7876	Kurdish:	7585	Serbo-Croatian:	8372	Yoruba:	8979
English:	6978	Laotian:	7679	Shona:	8378	Zulu:	9085
Esperanto:	6979	Latin:	7665	Sindhi:	8368		
Estonian:	6984	Latvian, Lettish:	7686	Singhalese:	8373		
Faroese:	7079	Lingala:	7678	Slovak:	8375		
Fiji:	7074	Lithuanian:	7684	Slovenian:	8376		

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WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

Designed for Windows Media™

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Specifications

AMPLIFIER SECTION

RMS Output Power: Dolby Digital Mode

Front Ch	170 W per channel (6 Ω), 1 kHz, 10 % THD
Surround Ch	70 W per channel (4 Ω), 1 kHz, 10 % THD
Center Ch	260 W per channel (4 Ω), 1 kHz, 10 % THD
Subwoofer Ch	260 W per channel (4 Ω), 100 Hz, 10 % THD
Total RMS Dolby Digital mode power	1000 W

DIN Output Power: Dolby Digital Mode

Front Ch	140 W per channel (6 Ω), 1 kHz, 1 % THD
Surround Ch	55 W per channel (4 Ω), 1 kHz, 1 % THD
Center Ch	180 W per channel (4 Ω), 1 kHz, 1 % THD
Subwoofer Ch	180 W per channel (4 Ω), 100 Hz, 1 % THD
Total DIN Dolby Digital mode power	750 W

FM/AM TUNER, TERMINALS SECTION

Preset station FM 15 stations
AM/MW 15 stations

Frequency Modulation (FM)

Frequency range	87.50–108.00 MHz (50-kHz step)
Sensitivity	
Australia and N.Z.	2.5 µV (IHF)
The United Kingdom	1.5 µV (IHF)
S/N 26 dB	
Australia and N.Z.	2.2 µV
The United Kingdom	1.2 µV
Antenna terminals	75 Ω (unbalance)

Amplitude Modulation (AM/MW)

Frequency range	522–1629 kHz (9-kHz step)
AM Sensitivity S/N 20 dB at 999 kHz	560 µV/m

Phone jack

Terminal	Stereo, 3.5 mm jack

DISC SECTION

Discs played [8 cm or 12 cm]

(1) DVD-RAM (DVD-VR compatible, JPEG formatted disc)
(2) DVD-Audio
(3) DVD-Video
(4) DVD-R, DVD-RW (DVD-Video compatible)
+R, +RW (Video compatible)
(5) CD-Audio (CD-DA)
(6) Video CD
(7) SVCD (Conforming to IEC62107)
(8) CD-R/RW (CD-DA, Video-CD, SVCD, MP3, WMA, JPEG formatted disc)
(9) MP3/WMA※1
- Compatible compression rate:
  MP3: between 32 kbps and 320 kbps
  WMA: between 48 kbps and 320 kbps

(10) JPEG※1
- Exif Ver 2.1 JPEG Baseline files
- Picture resolution: between 320×240 and 6144×4096 pixels (sub sampling is 4:2:2 or 4:2:0)

(11) HighMAT Level 2 (Audio and Image)

※1 The total combined maximum number of recognizable audio and picture contents and groups: 4000 audio and picture contents and 400 groups.

Pick up

Wavelength	CD 785 nm
	DVD 662 nm
Laser power	CLASS 2/CLASS 3A

Audio output (Disc)

Number of channels	5.1ch (FL, FR, C, SL, SR, SW)

Audio performance

(1) Frequency response	
●DVD (linear audio)	10 Hz–22 kHz (48 kHz sampling)
	10 Hz–44 kHz (96 kHz sampling)
●DVD-Audio	10 Hz–88 kHz (192 kHz sampling)
●CD-Audio	10 Hz–20 kHz
(2) S/N ratio	
●CD-Audio	95 dB
(3) Dynamic range	
●DVD (linear audio)	95 dB
●CD-Audio	93 dB
(4) Total harmonic distortion	
●CD-Audio	0.005 %

VIDEO SECTION

Video system

Signal system	PAL625/50, PAL525/60, NTSC

Composite video output

Output level	1 Vp-p (75 Ω)
Terminal	Pin jack (1 system)
The United Kingdom	Scart jack (1 system)

S-video output

Y output level	1 Vp-p (75 Ω)
C output level	PAL; 0.3 Vp-p (75 Ω)
	NTSC; 0.286 Vp-p (75 Ω)
Terminal	S terminal (1 system)
The United Kingdom	Scart jack (1 system)

Component video output
[NTSC: 525 (480) p/525 (480) i, PAL: 625 (576) p/625 (576) i]

Y output level	1 Vp-p (75 Ω)
P_B output level	0.7 Vp-p (75 Ω)
P_R output level	0.7 Vp-p (75 Ω)
Terminal	Pin jack (Y: green, P_B: blue, P_R: red) (1 system)

The United Kingdom

RGB video output

R output level	0.7 Vp-p (75 Ω)
G output level	0.7 Vp-p (75 Ω)
B output level	0.7 Vp-p (75 Ω)
Terminal	Scart jack (1 system)

SPEAKER SECTION

Front speakers SB-FS930

Type	2 way, 3 speaker system (Bass reflex)
Speaker unit(s)	Impedance 6 Ω
1. Woofer	8 cm Cone type
2. Woofer	8 cm Cone type
3. Tweeter	6 cm Ring shaped dome type
Input power (IEC)	170 W※2 (Max)
Output sound pressure	84 dB/W (1.0 m)
Cross over frequency	7 kHz
Frequency range	75 Hz–50 kHz (−16 dB)
	90 Hz–45 kHz (−10 dB)
Dimensions (W×H×D)	260 mm×1234 mm×270 mm
Mass	4.35 kg

Surround speakers SB-FS880

Type	2 way, 2 speaker system (Bass reflex)
Speaker unit(s)	Impedance 4 Ω
1. Woofer	8 cm Cone type
2. Tweeter	6 cm Ring shaped dome type
Input power (IEC)	70 W (Max)
Output sound pressure	81 dB/W (1.0 m)
Cross over frequency	7 kHz
Frequency range	78 Hz–50 kHz (−16 dB)
	90 Hz–45 kHz (−10 dB)
Dimensions (W×H×D)	260 mm×1234 mm×270 mm
Mass	3.92 kg

Center speaker SB-PC930

Type	2 way, 3 speaker system (Bass reflex)
Speaker unit(s)	Impedance 4 Ω
1. Woofer	6.5 cm Cone type
2. Woofer	6.5 cm Cone type
3. Tweeter	6 cm Ring shaped dome type
Input power (IEC)	260 W※2 (Max)
Output sound pressure	82 dB/W (1.0 m)
Cross over frequency	5 kHz
Frequency range	110 Hz–50 kHz (−16 dB)
	140 Hz–45 kHz (−10 dB)
Dimensions (W×H×D)	320 mm×88 mm×96 mm
Mass	1.36 kg

Active subwoofer SB-WA880

Type	1 way, 2 speaker system (Bass reflex)
Speaker unit(s)	
1. Woofer	15 cm Cone type
2. Woofer	15 cm Cone type
Output sound pressure	84 dB/W (1.0 m)
Frequency range	34 Hz–220 Hz (−16 dB)
	38 Hz–190 Hz (−10 dB)
Dimensions (W×H×D)	202 mm×410 mm×500 mm
Mass	13.7 kg

GENERAL

Power supply		AC 230−240 V, 50 Hz
Power consumption	Main unit	25 W
	Subwoofer	390 W
Dimensions (W×H×D)		430 mm×60 mm×348.3 mm
Mass	Main unit	2.7 kg
Operating temperature range		+5 °C to +35 °C
Operating humidity range		5 % to 90 % RH (no condensation)

Power consumption in standby mode	approx. 0.7 W

※2 Rating with low cut filter equipped amplifier

AMPLIFIER SECTION (for digital receiver)

RMS Output Power:	
Surround Ch	70 W per channel (4 Ω), 1 kHz, 10 % THD
DIN Output Power:	
Surround Ch	45 W per channel (4 Ω), 1 kHz, 1 % THD

GENERAL (for digital transmitter and receiver)

Power supply		AC 230−240 V, 50 Hz
Power consumption	Digital transmitter	0.3 W
	Digital receiver	35 W
Dimensions (W×H×D)		
Digital transmitter		97 mm×47.5 mm×8.5 mm
Digital receiver		103 mm×215 mm×178 mm
Mass	Digital transmitter	0.03 kg
	Digital receiver	2.3 kg
Wireless module		
Frequency range		2.402−2.480 GHz
No. of channels		79
Bandwidth/Channel		1 MHz
RF Output Power		13 dBm (Max)
RF Output Impedance		50 Ω
Type of Emissions		
Data Rate		1 Mbps
Operating temperature range		+5 °C to +35 °C
Operating humidity range		5 % to 90 % RH (no condensation)

Note

1. Specifications are subject to change without notice. Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, consult your dealer for instructions.

Power

		Page
No power.	● Insert the AC mains lead and system cable securely.	**6, 8**
The unit is automatically switched to the standby mode.	● The Sleep timer was working and had reached the set time limit.	**28**

Unresponsive or inoperable function

No response when any buttons are pressed.	● This unit cannot play discs other than the ones listed in these operating instructions. ● The unit may not be operating properly due to lightning, static electricity or some other external factor. Turn the unit off and then back to ON. Alternatively, turn the unit off, disconnect the AC mains lead, and then reconnect it. ● Condensation has formed: Wait 1 to 2 hours for it to evaporate.	**11** **—** **—**
No response when remote control buttons are pressed.	● Check that the batteries are installed correctly. ● The batteries are depleted. Replace them with new ones. ● Aim the remote control at the remote control signal sensor and operate.	**8** **8** **10**
No picture or sound.	● Check the video or audio connection. ● Check the power or input setting of the connected equipment. ● Check that the DVD-RAM has something recorded on it.	**4, 6, 7, 26** **—** **—**
You have forgotten your ratings password. Reset all the settings to Factory Preset.	● While stopped and “DVD/CD” is the source, press and hold [■] on the main unit and [≧10] on the remote control until “Initialised” disappears from the television. Turn the unit off and on again. All settings will return to the default values.	**—**

Specific operation undesirable or unexpected

It takes time before play starts. MP3	● Play may take time to begin when an MP3 track has still picture data. Even after the track starts, the correct play time will not be displayed. This is normal.	**—**
Folders deeper than the eighth layer on a data CD are not displayed correctly. WMA MP3 JPEG	● Folders deeper than the eighth layer are displayed as the eighth layer.	**—**
A menu screen appears during skip or search. VCD	● This is normal for Video CD’s.	**—**
Playback control menu doesn’t appear. VCD with playback control	● Press [■] twice and then press [▶] (play).	**—**
The program and random play functions do not work. DVD-V	● These functions do not work with some DVD-Videos.	**—**
Programmed items are not played. DVD-V	● Some items cannot be played even if you have programmed them.	**—**
The on-screen menu shows “2” as a soundtrack option when [AUDIO] is pressed, but the audio does not change. DVD-A	● Even if a second soundtrack isn’t recorded, two numbers will normally be shown.	**—**
Play restarts from the beginning of the track when soundtrack is changed. DVD-A	● This is normal on DVD-Audio.	**—**
Scenes are skipped intermittently. RAM DVD-V	● If you change the volume or sound field/quality setting during ADVANCED DISC REVIEW, the function continues without the on-screen display. Press [ADVANCED DISC REVIEW] again to cancel the function.	**14**

Subtitle

Subtitle position is wrong.	● Adjust the position. (“Subtitle Position” in Display Menu)	**19**
No subtitles.	● Display the subtitles.	**15**

Marker

Cannot add markers.	● You cannot add markers with DVD-RAM. ● If the disc’s elapsed play time doesn’t appear on the unit’s display, you cannot add markers.	**—** **—**

A-B Repeat

Point B is automatically set.	● The end of an item becomes point B when it is reached.	**—**
A-B Repeat is automatically canceled.	● A-B Repeat is canceled when you press [QUICK REPLAY].	**—**

Sound abnormal or improper

Sound distorted.	● Noise may occur when playing WMA.	**—**
Effects do not work.	● Some audio effects do not work or have less effect with some discs. ● Multi Re-master and Dolby Pro Logic II do not work if you have changed the play speed.	**—** **—**
Humming is heard during play.	● An AC mains lead or fluorescent light is near the subwoofer. Keep other appliances and cables away from the subwoofer.	**—**
No sound	● There may be a pause in sound when you change the play speed.	**—**
The United Kingdom **Sound mixed.**	● If you are using the SCART (AV) terminal and the audio input terminals (TV AUDIO IN) at the same time, turn off the connected equipment at one or the other terminals.	**—**

Menus

The Setup menu cannot be accessed.	● Select “DVD/CD” as the source. ● Cancel all group, program and random play.	**—** **15**

Picture abnormal or unviewable

		Page
Picture distorted.	● Ensure that the unit is connected directly to the television, and is not connected through a video cassette recorder.	**7**
Picture size doesn't fit the screen.	● Change "TV Aspect" in the "Video" tab. ● Change the Zoom setting.	**20** **14**
The television may display incorrectly or colors appear faded.	● The unit and television are using different video systems. Use a multi-system or PAL television. ● The system used on the disc does not match your television. – PAL discs cannot be correctly viewed on an NTSC television. – This unit can convert NTSC signals to PAL 60 for viewing on a PAL television ("NTSC Disc Output" in "Video" tab).	**—** **—** **21**
Menu is not displayed correctly.	● Restore the zoom ratio to "×1.00". ● Set "Subtitle Position" in Display Menu to "0".	**14** **19**
Auto zoom function does not work well.	● Turn off TV's zoom function. ● Use the other preset aspect ratios or manual adjustment. ● Zoom function may not work well, especially in dark scenes and may not work depending on the type of disc.	**—** **14** **—**
The picture on the television disappears or stripes appear on the screen.	● Mobile telephone chargers can cause some disturbance. ● If you are using a TV indoor antenna, change to an outdoor antenna. ● The television antenna wire is too close to the unit. Separate the antenna wire of the television from the unit.	**—** **—** **—**

Progressive video

There is ghosting when progressive output is on.	● This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output. Change "Video Output Mode" in Picture Menu to "576i (or 625i)" or "480i (or 525i)".	**19**
Pictures not in progressive output.	● Press [PROGRESSIVE] on the main unit so "PRG" is displayed. Or select "576p (or 625p)" or "480p (or 525p)" in "Video Output Mode" in Picture Menu. ● If the unit is connected to the television through VIDEO OUT, S-VIDEO OUT or SCART (AV) terminal, output will be interlace even if "PRG" is displayed.	**12, 19** **7**

Listening to the radio

Noise is heard. **"ST" flickers or doesn't light.** **Sound is distorted.**	● Adjust the position of the FM or AM antenna. ● Use an outdoor antenna.	**—** **23**
A beat sound is heard.	● Turn the television off or move it away from the unit.	**—**
A low hum is heard during AM broadcasts.	● Separate the antenna from other cables.	**—**

Television operation

Cannot operate the TV.	● Press [TV] first to operate the television. ● Check the remote control code for the TV manufacturer.	**—** **27**

Digital receiver

Wireless link indicator does not light.	● Check that the main unit and the digital receiver are turned on. ● Ensure that the digital transmitter is fully inserted into the slot of the main unit.	**9** **8**

Unit displays

The display is dark.	● Select "Bright" in "FL Dimmer" in the "Others" tab.	**21**
"NO PLAY"	● You inserted a disc the unit cannot play; insert one it can. ● You inserted a blank disc.	**11** **—**
"NO DISC"	● You haven't inserted a disc; insert one. ● You haven't inserted the disc correctly; insert it correctly.	**—** **12**
"F61"	● Check and correct the speaker cord connections. If this does not fix the problem, there is a power supply problem. Consult the dealer.	**4, 6**
"DVD U11"	● Disc is dirty. Wipe it clean.	**11**
"ERROR"	● Incorrect operation performed. Read the instructions and try again.	**—**
"DVD H□□" □□ stands for a number.	● Trouble may have occurred. The number following "H" depends on the status of the unit. Turn the unit off and then back to ON. Alternatively, turn the unit off, disconnect the AC mains lead, and then reconnect it. ● If the service numbers fail to clear, note the service number and contact a qualified service person.	**—** **—**
" W " is flashing.	● There is no link between the main unit and the digital receiver. Check that the digital receiver is turned on.	**9**
"W01" is flashing or lit.	● Re-initialize the main unit: While stopped and "DVD/CD" is the source, press and hold [■] on the main unit and [≧10] on the remote control until "Initialised" disappears from the television. Turn the unit off and on again. If the problem persists, contact a qualified service person.	**—**

Television displays

"⃠"	● The operation is prohibited by the unit or disc.	**—**
"Cannot display group xx, content xx"	● You are trying to display incompatible contents.	**—**
"This disc may not be played in your region"	● You can only play DVD-Video if their region number is the same or includes the same region number as the unit or if the DVD-Video is marked "ALL". Confirm the region number for the unit on the rear panel.	**Cover page**
No on-screen display.	● Select "On" in "On-Screen Messages" in the "Display" tab.	**21**

Declaration of Conformity (DoC)
Hereby, Panasonic AVC Networks Singapore Pte. Ltd. (PAVCSG) declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Customers can download a copy of the original DoC to our R&TTE products from our DoC server:
http://www.doc.panasonic.de

Contact in the EU:
Panasonic Marketing Europe GmbH
Panasonic Testing Centre
Winsbergring 15
22525 Hamburg
Germany

The United Kingdom

CE 0682 ①
OPERATING AT 2402MHz TO 2480MHz
This product is intended to be used in United Kingdom.

The United Kingdom and Republic of Ireland

■ Sales and Support Information

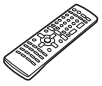
Customer Care Centre
- For customers within the UK: 08705 357357
- For customers within the Republic of Ireland: 01 289 8333
- Visit our website for product information
- E-mail: customer.care@panasonic.co.uk

Direct Sales at Panasonic UK
- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday-Thursday 9:00am-5:30pm, Friday 9:30am-5:30pm. (Excluding public holidays)
- Or go on line through our Internet Accessory ordering application at www.panasonic.co.uk
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products, take a browse on our website for further details.

Accessories

Please check and identify the supplied accessories.
Use numbers indicated in parentheses when asking for replacement parts.
(Product numbers correct as of February 2005. These may be subject to change.)

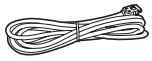
☐ **1 Remote control**
(EUR7722XC0)



☐ **2 Remote control batteries**

☐ **1 Video cable**
(K2KA2BA00001)

☐ **1 System cable**
(K1HA25HA0001)

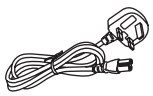


☐ **1 AM loop antenna**
(N1DAAAA00001)

☐ **1 FM indoor antenna**
(RSA0007-L)

☐ **2 AC mains lead**
Australia and N.Z.
(K2CJ2DA00010)

The United Kingdom
(RJA0053-3X)



☐ **1 Sheet of speaker-cable stickers**

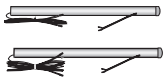
☐ **Speaker cables**
1×short cable
(REE1203A-1J)

☐ **4 Bases**
(RYQX0191-S)

☐ **8 Long screws**
(XSN5+35FJ)

☐ **8 Short screws**
(RHD30090-1)

☐ **4 Pipes**
2×pipes with short cable
(RYQX0190-S)
2×pipes with long cable
(RYQX0301-S)



The United Kingdom
☐ **1 Antenna plug adaptor**
(K1YZ02000013)

Matsushita Electric Industrial Co., Ltd.
Web Site: http://www.panasonic.co.jp/global/

En